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WELCOME.

City officials and friends of City Government are cordially invited to make the offices of City Government their headquarters during their visit in either city. Desks, stenographers and stationery are placed at their disposal, and their mail may be addressed in our care.

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Texas has organized a State municipal league.

* * *

The city official is not half so bad as he is painted.

* * *

When in need of information about city affairs address our "Inquiry Department.

* * *

Aldermen are in the ascending scale, not descending as some people would have you believe.

* * *

Health officers will read with interest about "Rochester's Municipal Pure Milk Station," elsewhere in this number.

* * *

In the August number we will commence the publication of opinions of America's fire fighters upon some practical matters.

* * *

Every Sunday contributes its regular quota of killed and injured by the deadly trolly car. The irrepressible spirit of haste "to get there," on the part of the pasenger, the sometimes stupidity and carelessness of the motorman, and the general cupidity of the management are to be blamed for their frequent occurrence. Some way should be devised to check the slaughter.

Good as An "O. K." Mark.

When the new management assumed control of "City Government" it adopted the highest business standard, to be maintained at any cost. Its aim was to conserve, always, the best interests of both the reader and the advertiser, realizing that thereby its success would be assured. For the reader we have spared no pains nor expense in giving, from month to month, a comprehensive review of the affairs in the municipal world. Moreover, it has endeavored to maintain the same degree of excellence in the advertising pages, having the conviction that our readers would be interested in firms which make the construction and maintenance of the modern city a posibility.

Herein again we have looked after the interests of the reader, thereby enhancing the value of our space to the advertiser, for we acept no contracts for advertising which are not found to be "O. K." upon investigation. Every month, therefore, we are obliged to reject contracts that do not reach up to our standard.

More than $500 worth of business was so rejected in June and with firms whose advertisements we notice in other journals.

Because of the care exercised on our part in the acceptance of an "ad." we feel justified in asserting that when you see a firm's "ad." in "City Government" it may be considered an "O. K." as to their reliability.

That this policy has been appreciated the large increase in the number of our readers and advertisers is sufficient evidence.

Sleepy Buffalo.

The city of Buffalo is something of a "back number" in its administration affairs. With Uncle Rube-like simplicity it acepts the ultimatum of the banking houses: "We can't afford to pay more than two and one-half per cent., quarterly, on the city's deposits!" That is rather a severe criticism on the business ability of the bankers, if the statement is true, for Cleveland draws over three per cent. on daily balances, Allegheny and Pittsburg three and two and one-half per cent respectively. But, of course, the statement isn't true and no one pretends to believe it. The question is, will sleepy Buffalo wake up and demand its just dues, or continue to lose thousands of dollars in interest every year?

St. Louis Strike Ended.

The St. Louis street car strike is ended. Terms have been agreed upon and signed by both parties. The real bone of contention was a demand on the part of the strikers that only union men should be employed. There was no charge that union wages were not maintained. While one of the exactions was for higher wages, yet it was not the cause of dissatisfaction, but only an incident thereto.

Looking at the strike from a purely disinterested standpoint, the company has been in the right and has maintained law and order throughout the disturbed interval. The depredations of the strikers or their "sympathizers" have been the most wanton, shameful and disreputable in the history of labor troubles in this country.

Considering the history of the strike the terms are magnanimous on the part of the company and will militate against the ringleaders only. As touching the demand, which precipitated the strike, both parties agreed as follows:

Every employee of the company to be free to join or not to join any organization, and no discrimination to be made for or against him because of the manner in which he exercises his freedom.

Any attempt on the part of any employee to induce another employee by intimidation or threats to join or not to join any union shall be cause for immediate discharge of the person guilty of such attempt.

Any attempt to influence any employee by an official of the company to join or not to join any union shall be cause for discharge of such official.

The company will meet any employee or committee of employees, whether representing themselves, other employees, or an association of employees, regarding any matter of mutual interest.

In the adjustment of matters relating to the terms upon which strikers could be re-instated the most difficulty was experienced. The settlement reached is generous to the strikers and not unfair to the new employees. The stipulation is as follows:

For the purpose of filling vacancies which may now exist or hereafter arise, the committee of former employees, of which T. B. Edwards is chairman, shall prepare a list of the men who were in the company's service on May 7 last, and as the company now or hereafter needs additional men, it will select them exclusively from this list until it is exhausted, not interfering, however, with men now in the service. No person shall be eligible to this list who has been guilty of any acts of lawlessness or violence.

Syracuse Investigation Continued.

The troubles of Syracuse seem to multiply. First, a legislative committee, several months ago, conducted a spectacular investigation, primarily, to locate the whereabouts of an alleged deficit of $400,000; secondarily, to promote partisan ends.

As a result the Governor appointed a special grand jury to probe still further and locate, if possible, the ulcer which was feeding upon the city's vitals.

This grand jury, after weeks of diligent work, made a partial report on July 3, handing in indictments against Mayor McGuire, fifteen alderman and several other city officials for alleged misdoing in connection with the deficit.

The final report of the grand jury was brought in on July 5, and includes another lot of indictments accusing certain city officials with more serious crimes.

Regarding these indictments Mayor McGuire, according to a special from Kansas City to the New York "Times," said:

"The indictments charge me with technical offenses. They charge me with wrongfully signing a resolution of the Common Council, charging the supply account to the highway instead of to the contingent fund. Every Mayor in the State of New York could be indicted for the same offense. So could half the Governors and Presidents of the United States. The grand jury which found the bills was composed of nineteen Republicans and three Democrats, and was a partisan one. The indictments amount to nothing."

A representative of "City Government," while in Syracuse recently, was told by several city officials that the investigation was purely partisan and that there had never been a time when the city did not have just such deficits as are now alleged to exist, including the administrations of both Republicans and Democrats.

When several prominent Republicans were called upon for an opinion, every one admitted that the investigation was being conducted largely, but not wholly, for partisan reasons. They also admitted that deficits of a similar character had been the usual thing, previous to the present administration, but that such deficits had never exceeded $100,000.

Even admitting the whole thing to have been investigated and continued with partisan animosity, as affirmed by the present administration; admitting, also, that the charges are founded upon simple technicalities, the attitude maintained by the present administration is most unfortunate. The fever of rage and ridicule, not to say opposition, with which the investigation has been greeted by the investigated is only calculated to arouse suspicion in the public mind.

On general principles, whenever any city official's integrity is assailed, the politic and dignified course to pursue—especially when a man is innocent—is to keep silent—not to bluster; to lend every possible aid for a speedy and thorough investigation. Vindication, under such circumstances, will give added glory to the one wrongfully accused.

For example, the course pursued by a New York official, who was accused of malfeasance in office was a model of its kind. He asserted his innocence in a calm, dignified manner and firmly demanded a speedy examination of the whole matter.

The thinking city official always reads "City Government."

* * *

Every Mayor's office should be fitted with a carefully selected library upon municipal affairs.

The Human Sacrifice at Hoboken.

Somebody blundered at Hoboken, or there could not have been such a loss of life and property in that disastrous fire at the North German Lloyd piers.

It matters not whether the blunder bore the date of the fire, or not, it was a blunder just the same. As Josh Billings said, "our hindsight is better than our foresight." The blunder which made this calamity possible was perpetrated years ago. The fatal mistake was in the exclusive use of wood and other inflammable materials, instead of stone and iron.

At the time the piers and contiguous buildings were constructed no one dreamed that such a conflagration would be possible. Hence no precautions were taken.

For years there has been a gradual awakening of the public and official mind to the fact that these conditions were inimical to human life and possible disaster has been foretold. But not the most imaginative pictured the frightful loss of life sustained.

Now that the experience has been dearly bought, it would be well to be wise. Some European cities, especially London, can give us pointers on preventing fires. We are experienced fire-fighters,—none beter in the world,—but we pay little or no attention to modern regulations as to building construction.

No rules which have to do with the construction and maintenance of a city are worthy of more careful consideration than those governing fire prevention, and yet, none have received so little notice.

The time has come for the adoption of heroic measures. Time and money should be liberally contributed for a searching investigation of the subject in order that restrictive laws may be made which shall prevent a repetition of the horrible disaster.

Municipal Housekeeping.

The woman's club of Palo Alto, Cal., acting through the village improvement committee, has arranged for the purchase and distribution of a number of large rubbish or trash boxes. These are to be made as pleasing to the eye as possible, and each painted a different color and placed at convenient distances throughout the town. An appeal has already been issued to the boys and girls asking their cooperation in "cleaning up" and keeping clean.

Juvenile Street Cleaning League.

Thirty-five branches, with a membership of 1,100 children, were represented at the "demonstration" of the New York Juvenile Leagues of the department of street cleaning. The leagues were organized by the late Col. Waring; their members are children of the tenements, who take a pledge to assist in every way they can to keep the streets clean and prevent any deposit of refuse there.

Personals.

—Mayor Sherrison is the new executive of Natchitoches, La.

—S. J. Ballingen is the new Mayor of Cheney, Washington.

—J. B. Roys is the new City Engineer of South Bend, Ind.

—Frank J. Esker is the newly elected Mayor of Chillicothe, O.

—A. A. Cochran, Esq., has been elected city solicitor of Chester, Pa.

—John J. Sullivan has been elected the first Mayor of Republic, Wash.

—Dr. H. C. Fraker has been appointed City Bacteriologist of Columbus, O.

—Geo. W. Wilson has been appointed Director of Public Works of Pittsburg.

—Dr. Thomas Grinan was elected Mayor of Santiago, Cuba, without opposition.

—The Springfield, Ohio city clerkship suit has been decided in favor of Robert N. Lantz by the Supreme Court.

—Globe City, Arizona, has just become a city of the first class. George W. P. Hunt has been chosen as its first Mayor.

—Frederick S. Knight of Pittston has been elected superintendent of the water and light department of Chambersburg, Pa.

—Gen. Alejandro Rodriguez has been elected Mayor of Havana, Cuba, polling 13,073 votes as against 6,034 for Senor Mora.

—Mayor Merchant of Gloucester, Mass., announces the acceptance of an invitation by Admiral Sampson to attend the hospital fete on July 10.

—Mayor Dillon and the Board of Aldermen of New Rochelle, N. Y., played ball with a picked nine, recently, for the benefit of the Day Nursery.

—The Syracuse "Post-Standard" says "Mayor Maguire of that city had a six-pound son born on June 10. He has already shown himself an orator."

—The Mayor of Albany, N. Y., James H. Blessing, was requested to permit the use of his portrait in fireworks, to be used upon the evening of the Fourth of July. He declined with thanks, thereby showing his good sense.

Press Comments on Municipal Affairs.

Color Line in Street Cars.

[Chicago Tribune.]

The color line is to be drawn on New Orleans street cars. All through the South "jim-crow" cars, as they are called, are run by the railroads in which the colored people ride by themselves, in order that the white people may not be offended by being compelled to sit alongside or next to their darker fellow-citizen. The New Orleans street cars have no such separate provision for the races. Recently a member of the Louisiana Legislature made his first visit to New Orleans and when he went from there to Baton Rouge he told the legislators that he had seen conditions in that city which excited his indignation. Colored people entered the street cars and actually sat down alongside of white people and white persons had no choice but to remain in the unpleasant vicinity or else to get out and walk. The country legislator's suggestion was received with approval by his fellow-legislators. The bill which he introduced is regarded as certain of passage, although the New Orleans street railways protest because of expense. It calls for separate cars for negroes and white passengers, and provides stiff penalties for its violations. The committee to which the bill was referred made a unanimous report in its favor, and that it will be passed is accepted as a foregone conclusion by the New Orleans press. Thus the color line will be drawn closer than ever in New Orleans in honor of the approaching end of the nineteenth century.

Care of Shade Trees.

[Augusta (Ga.) Chronicle.]

The Civic League cannot do a better work for the city of Augusta than to make a persistent and continued demand upon the city government for more intelligent care of our shade trees. The reckless manner in which these trees are trimmed up and the way they are neglected, as well as the haphazard manner in which new trees are substituted, is little short of a municipal crime. Augusta's shade trees are one of her most valuable assets, both as a matter of health and ornamentation, and it is criminal negligence either to allow these trees ruined by incompetent pruning or to die for the lack of proper care. They ought to be under intelligent and expert supervision.

Councilmen and Bribery.

[Philadelphia Record.]

Venality among legislative representatives of the people is exceedingly common. Many members of municipal councils have no apparent source of maintenance, yet live extravagantly. It is more than suspected that few municipal contracts are awarded, franchises granted or departmental supplies purchased without the preliminary acceptance by a few councilmen of a douceur for "friendly services." Indeed, in many cases councilmen have descended to direct blackmail in their demands. Another thing which strengthens belief in the dishonesty of councilmanic bodies is the everywhere patent fact that they take no pains to faithfully represent the people, but too frequently consider themselves responsible only to their own inclinations or to those of their bosses.

But every suspected man is not dishonest, nor is an accusation against his integrity prima facie evidence of his guilt. There are honest men in the world, and no doubt some of them are elected to councils.

The St. Louis Disgrace.

[Boston Herald.]

The condition of affairs growing out of the street railway strike in St. Louis furnishes an object lesson which should not be lost upon those who are responsible for the peace and order of our American cities. It does not in the least matter what were the original merits of the controversy. When matters reach a pass that street cars plying on the public highways are liable to be blown up with dynamite; when passengers who use them need to have prompt police protection accorded to them to prevent gross outrage or, possibly, loss of life, a condition of lawlessness exists which, in a civilized community, is simply intolerable. This has grown up in St. Louis for the reason that the constituted authorities do not seem to have had the wit or determination to draw hard and fast lines separating the permissible from the non-permissible in a conflict going on between labor and capital. It may be that the street railway companies of that city have not paid to those in their employ the wages which they were entitled on equitable grounds to demand, or it may be that the hours of labor required were unduly long or constant. Whatever the cause may have been, these employees, separately or collectively, had an entire right to quite work and to use every moral effort at their command to prevent others from taking their places and to establish a boycott that would make the street railway service unprofitable to those who owned it. This is a large power to possess; but the strikers had the right to use it if they were so minded. It is obvious, however, that they have gone far beyond this, transposing moral influence into intimidation, physical obstruction and destruction of property, and this, as it seems to us, because when the first overt acts were committed those responsible for the good government of the city did not instantly interfere and promptly and effectively punish the offenders. The contest is now dragging on under conditions which must inevitably end in the defeat of the strikers, in the first place because they have by their outrages forfeited quite a part of the public sentiment that once sustained them, and, second, the street car companies cannot afford now to take them back, for the reason that those who would blow up cars with dynamite and attempt to kill innocent passengers are hardly persons whose services any individual or company would care to knowingly engage.

Fifty Cents a Copy will be paid for a few copies of City Government, August and November, 1896.

The Utility of Dreaming.

[Pittsburg Dispatch.]

An alderman in Syracuse has discovered the usefulness of that involuntary mental activity which goes on in sleep. In former times most people believed in dreams, and there are some who still think that they have significance. But Alderman Frank Matty of the New York town is the first to demonstrate the utility of dreams in getting a man out of a tight corner.

This functionary announced to the reporters the other day that the Grand Jury, then in session, had indicted certain other persons in a local cause celebre. This was disclosing the secrets of the Grand Jury room, and the Alderman was hauled to court to tell where he got his information. Realizing that he was up against it—to use the slang of the day—and that the favorite device of statesmen in saying that the reporters lied might not work, he ingeniously confessed to the court that he had simply had a dream and was so impressed by it that he gave it out as a fact.

The learned Court, with some effort, swallowed the explanation and dismissed the witness without even a warning to any more pipe dreams. The success of the plea seems likely to make it popular. A man cannot be punished for dreaming things. Since we have already resorted to slang it will be interesting to wait and note if the recently prevailing "Forget it" is not supplanted by the broader and more useful injunction to "Dream it."

Socialism in Boston.

[Dallas News.]

It seems to be very generally admitted that the Josiah Quincy method of running a city along socialistic lines is a costly failure. When Mr. Quincy became Mayor of Boston two years ago he decided to make experiments in municipal government along socialistic lines. He carried out his purpose, and it will be several years before the taxpayers of Boston recover from the effects. It seems that the Quincy plan contemplated the abolition of the contract system and the doing of city work direct by city employees, without the intervention of middlemen or the restriction of competitive bidding. Not only was all work on streets and sewers done in this way, but bureaus were established for carpenter, electrical and other work, both in the constructive line and in repairing. There was established a municipal ice plant, and blacksmiths, painters and other artisans were employed by the score to do the work that might be required of them. The result was a tremendous increase in the cost of such work. One job of electrical equipment that should have cost but $6,800, actually cost $10,200, and the city paid $4,754 for another job which should have cost only $1,528. Other work which private contractors would have done for $2,600 cost the city $6,700. These are only instances which are given by a writer in Harper's Weekly. The municipal ice plant turned out artificial ice at a cost of $60 a ton to the city, which is several times what it would have cost if purchased from a private company. It was soon discovered that the city was being led into inexcusable extravagance and the bureaus were closed, one after another. One of the direct results of this experiment in socialism is an increase in the debt of the city to four times the limit fixed by the State Legislature, and the interest on this debt, together with the sinking fund payments, amounts to more than the entire sum raised annually by taxation. The main reason for the failure is said to have been the fact that every city employee was a political heeler who held his position through the favor of a boss, and the payrolls were simply loaded down with superfluous men. Since the present Mayor, who succeeded Quincy, came into office, he has dismissed enough city employees to effect an annual saving in salaries of between five and six hundred thousand dollars. This is the case as it is presented by Harper's Weekly. The facts and figures and the arguments drawn therefrom would seem to be well nigh conclusive. The main trouble with socialism is that it promises, first of all, to bring public work and service down from the basis of legitimate business to the basis of low political jobbery. Socialism is the very condition of society in which the political boss and the noisy campaign whooper and heeler would be at their best. With such helps as these, it would doubtless become in due time little better than a raid of greedy robbers, subject to no kind of legal restraint or civil control.

Convention Dates.

Secretaries of Municipal Associations, Civil Engineers' Societies, Fire and Police Conventions, Electrical Associations, and of all other associations relating to any phase of municipal work will confer a favor on "City Government" by sending dates of annual and quarterly gatherings for record under this caption. The Editor would, also, be pleased to receive advance copies of all subjects discussed.

AUGUST.

1-2.—Maine State Firemen's Association, Gardiner.

16.—The general meeting of the American Institute of Electrical Engineers, to be held in Philadelphia on May 16, will adjourn to meet in Paris in joint session with the British Institution of Electrical Engineers.

21-24.—New York State Firemen's Association, Syracuse, N. Y.

28.—American Society for Municipal Improvement, Milwaukee, Wis.

SEPTEMBER.

12-13.—New Jersey State Firemen's Association, Atlantic City, N. J.

22-26.—National Prison Association, Cleveland, O.

25-27.—International Association of Municipal Electricians, Pittsburg, Pa.

26-28.—Virginia State Firemen's Association, Richmond.

OCTOBER.

1-5.—American Public Health Association, Indianapolis, Ind.

2-5.—Pennsylvania Firemen's Association, New Castle.

9-12.—International Association of Fire Engineer's, Charleston, S. C.

DECEMBER.

12-15.—League of American Municipalities, Charleston, S. C.

General Items.

TELEPHONE IMPROVEMENTS.

A syndicate has just been formed under the auspices of the Bank of Darmstadt, Germany, to bring into practical use certain telephone improvements that have been tested in Government offices. These inventions are to make it possible to retain the spoken word and to repeat it as freely as desired; to use the same wire for simultaneous conversation by different parties; to repeat the same conversation at various points; and to strengthen the sounds so as to make the long-distance telephone operate with better results.

* * *

SYRACUSE MUSEUM OF FINE ARTS.

The Council of Syracuse, N. Y., recently passed an ordinance appropriating $10,000 for the establishment of what will be known as the Syracuse Museum of Fine Arts. Prof. George F. Comfort, former dean of Syracuse University, is the father of the project. He was one of the prime movers in the inauguration of the now famous Metropolitan Museum of Fine Arts of New York city. It is to be hoped his second venture will be equally successful.

* * *

COLLECTION OF BUILDING PERMITS.

Building Inspector Jackson of Scranton, Pa., is having considerable trouble in the administration of his department, owing to the unwillingness on the part of some citizens to obtain the required permit for building purposes. He is, however, the right man for the place, for, without a moment's hesitation, he has "taken the bull by the horns," so to speak, and invoked the assistance of the law. This sort of tactics makes the unruly citizen of Scranton toe the mark.

* * *

RULES FOR CITY BUYER.

The General Council of Louisville, Ky., has passed an ordinance which makes it obligatory for the city buyer to advertise for bids on all contracts over $100. It is thought that by this means considerable money will be saved to the city.

Chicago's Proposed Subway.

The Street Railway Commission of the City Council of Chicago presented to representatives of the surface railways recently the general outlines of a plan for the construction of ten miles of traction subways in the business district, the cost broadly estimated to be $1,000,000 a mile. The plan in its general scope met with favor at the hands of the Union Traction Company, but the Chicago City Railway officials who attended the meeting were not able to make any definite promises as to what their corporation would do.

It is stated that the Union Traction Company indicated its willingness to pay 50 per cent. of the cost of the subway system.

The plan presented, but not yet worked out in detail, embraces the lowering of the La Salle, Washington, and Van Buren street tunnels, so as to allow at least twenty-one feet of water to flow above their tops, and the construction of three subway loops, each independent of the others and each leading from one of the tunnels under down-town streets.

It is a contention of the street railway engineers that the loops shall not intersect. One sugestion is that the South Side lines shall begin to go underground at Harrison street and use the same loops as that to be used by the Southwest Side lines, which use the Van Buren street tunnel in crossing under the river.

Not only the cable lines now using the tunnels will be operated in the underground loops but all the electric surface lines will likewise use the subways.

According to the plans the gigantic subway system is to be completed within three years, or by the time that the companies' franchises expire in 1903. Engineers of the Union Traction Company already have drafted rough plans for the work, and they will be submitted to the Chicago City Railway Company and the city engineers. A further meeting between Commissioner McGann, the City Engineer, and a representative of the Union Traction Company is to be held within two or three days to go more into the details of the project.

The conditions under which the Union Traction Company will agree to pay one-half of the cost of construction of the subways are not given out. It is stated, however, that the company expects to be granted an indefinite franchise to the tunnels and a twenty-year extension franchise for its other lines on the payment of a certain percentage of the gross receipts, probably 4 per cent.

A member of the commission said, at the close of the conference, that one condition on which the City Council would be likely to insist in conection with the building of the subways was that they should be used as conduits for gas and water pipes and all manner of electric lighting, telephone, and telegraph lines, thus doing away with the frequent necessity of tearing up streets at the same time they are obviating the congested surface street car evil. He said further that the streets under which the subways would be built had not yet been agreed on, but that the subways would not intersect.

TELEGRAPH POLES REMOVED.

The Highway Comissioner of Harrisburg, George Stucker, has had all the poles and posts removed from the gutters of the city. The ordinance providing for this was an old one which had not been enforced.

City Government in Canada.

S. M. Wickett has a paper in the "Political Science Quarterly" for June on "City Government in Canada," which is full of interesting data, current and historical. Persons that argue despairingly of municipal government in the United States are fond of pointing the moral with English experience, declaring, nevertheless, that the English model of municipal corporations, with suffrage restricted to considerable ratepayers and the executive dependent upon a substantially permanent council of notables, is an impracticable dream in a republic of universal suffrage. But Mr. Wickett describes a system only slightly modified from the British, which is carried into effect without trouble, and seems to work pretty well in what is virtually a universal suffrage republic—the Dominion of Canada.

It is to be borne in mind that Canada has no great cities; only two of more than 100,000 and none of more than 300,000 people. Moreover, the population is singularly homogeneous. Leaving out the native French, in the eight principal cities only 5.3 per cent. are foreign born, and more than half of those are Americans. There is no foreign vote to bedevil municipalities. Most of the charters are comparatively recent, only St. John having been incorporated before 1832. Perhaps the test has not been long or severe enough to prove the adaptibility of the British method to American conditions.

Canadian cities get their charters from the provincial parliaments. This seems to resemble the American plan, but the parliaments grant charters with the freedom of adaptability to special conditions exercised by the British parliament, rather than with the close adhesion to a common model seen in our state legislatures. Though there are some general municipal acts for common purposes, especially in Ontario, and though both Ontario and Manitoba discourage special legislation, each municipal charter seems an individual growth, determined by its own conditions. Suffrage qualifications vary, for example, from the English standard of a year's residence and payment of poor and city rates in Prince Edward's Island, up to an income of $400 in Ontario. Manitoba and Quebec demand a realty qualification of $400 and about $300, the latter varying in different cities. On the Pacific coast the property qualification is higher and the residence exaction less. Everywhere, however, the theory of this joint stock company prevails, only those interested being allowed a voice in management.

They have managed somehow to separate municipal affairs wholly from party politics in Canada. The elections are never held at the same time, and the voters are different; there is female and plural suffrage in the cities. Besides, local interest and influence predominate in public feeling, and Mr. Wickett speaks vaguely of "certain regulations as to municipal patronage, through which politicians are in part shielded from local politicians and in part removed to the broader and more suitable field of the province." It would be interesting to know what these are. They might bear transplanting. The administrative system is more British than American, though the Mayor is elected by popular vote, except in Quebec, where he is chosen by the council. But the other municipal officers are named by the Mayor and Council, and the latter remains the most potent force. These appointments are practically for good be-

havior, though Aldermen and Mayors are elected annually in most cases. This is a defect greatly complained of, as making it hard to get the best men to take office, though it would seem that re-elections are the rule. In some cases provincial boards have been created for control of police and granting of liquor licenses, and Toronto is trying the American experiment centering more power in the hands of the Mayor.

In spite of the general honesty and efficiency of municipal administration, Canadian cities show no disposition to burden themselves with public works, except for supply of water, which is almost universally a municipal function. A few small cities have electric lighting plants. Generally, however, franchises are granted for terms of years, averaging about fifteen, for which reasonable compensation is exacted, and prices are about the same as in the United States. City debts are not excessive, and have generally been contracted for water works or education. There is generally a healthy public spirit and keen popular vigilance for abuses. It is noted that restriction of suffrage to ratepayers does not entirely repress tendency to municipal extravagance.

Teachers' Retirement Fund.

The city of Minneapolis will soon vote upon its uew charter, upon which a commission has been patiently laboring for the past six months.

The members of the commission have, after prolonged and heated discussions, adopted a provision which is worthy of a city of its size and in harmony with Twentieth century ideas, viz., a teachers' retirement fund. The fund is to be derived in the following manner:

1. One per cent. to be deducted monthly from the salaries of the teachers, other than substitutes, regularly employed by the board of education.
2. All moneys appropriated by the city council to said fund.
3. All deductions made from the salaries of teachers from any cause, whether made under contracts now in force at the time the new charter is adopted.
4. All moneys turned into the fund from any other source.
5. The city council will be required to make an annual appropriation of an amount equal to one per cent. of the salaries paid the teachers regularly employed during the preceding fiscal year.

St. Paul's New Charter.

The city of St. Paul, Minn., is now working under the operation of its new charter, which went into effect last month.

The charter commission provided that all of the reforms to be effected by the adoption of the new charter shall come about gradually. The officers elected before its adoption will serve out their terms and one by one the different departments will be reorganized under the charter recently adopted by the voters of the city. The only officer to assume new duties was the city engineer. With the new charter he became commissioner of public works, and has charge of the street work and crews without reference to the Board of Public Works. Under the old charter he was subject to the orders of the Board of Public Works, and his appointments of street commissioners had to be confirmed by that body.

At the end of the present building inspector's term the office of building inspector will be abolished and the commissioner of public works will have general supervision of building operations. The Mayor will appoint a commission to-day to prepare an ordinance regulating the construction of buildings. Beginning with Jan. 1 the commissioner of public works will also have charge of the collection and disposition of garbage and rubbish.

Little change is made in the Board of Public Works, except that as soon as the term of one of the members expires the board is to be reduced to three. Heretofore the giving of notice of assessments on property to pay for local improvements has been voluntary on the part of the board. The new charter makes it obligatory. The most important change that takes effect immediately is that of relieving the councilmen of all authority in regard to the lighting of the streets. The relocation and discontinuance of lamps is left entirely in the hands of the Board of Public Works.

The controller has a lot of work imposed upon him by the adoption of the new charter. He is required to prepare a set of blanks for the use of each of the city departments. The plan of the new charter is to secure uniformity and absolute accuracy, and the different officials are obliged to use the forms prepared by the controller. In the past the tax levy certificates were issued by the controller in $500 denominations. One-half of each issue that is hereafter put out will be in $100 certificates, for the accommodation of the small investor.

The Youngest Official.

Master Francis Marriott, of Delaware, Ohio, has started life in the political arena at the tender age of six years. He has already gained a large reputation as a politician in the Buckeye state. He now holds a regular commission, signed by Governor Nash, as a state official of Ohio,—that of superintendent of squirrels in the state house grounds at Columbus.

Electrical Workers' Strike.

Baltimore has ,probably, one of the most unique strikes in the history of labor troubles in this country. It resulted from a demand made upon the United Electric Light and Power Company, which controls all the electric plants in the city, by the arc light trimmers for an increase from $10 per week of seven days, to $2 per diem straight time. This demand was met on the part of the company by a dismisal of the dissatisfied men, whereupon all trimmers struck, immediately followed by the going out of the electric linemen, the street-railway "trouble" men, and shortly thereafter all the linemen employed by the telephone companies.

To all appearances an adjushment has been reached in all classes except the electric light trimmers and linemen who are still out.

The "strikers" have consistently maintained an attitude of peaceful defiance. Some few reports of disorders, attacks on non-union men, breaking of lamp globes, and cutting of light circuits have very generally been traced to so-called "sympathizers," who in reality compose the lawless class found in every community, and who do not not want work at any price.

The policy of the strikers seems to be one of moral persuasion, and numbers of imported trimmers and linemen have left the company's employ upon learning of the true situation.

A preliminary federal injunction was obtained by the agents of the Electric Company, restraining the strikers, 147 in number, named individually, from interfering with the work or agents of the company, and further proclaiming what is exceedingly obnoxious to the community, viz.: To restrain the strikers from talking with their employees for the purpose of persuading them from working.

The peaceable intentions of the strikers was evinced by their gathering at a stated time and place to have process served upon them and hear the injunction read. When the difficulty of serving process upon 147 individuals is considered, the strikers must undoubtedly get full credit for their action. Their method in retaliation as to this injunction was to arouse interest in their behalf upon the part of the retail merchants who are customers of the electric company. Resolutions were passed by various labor organizations sympathizing with the strikers, and declaring a boycott against retail merchants who persisted in using electric lights, and prescribing fines of various amounts, generally $3 to $5, as a penalty for violation on the part of members of these organizations.

This has naturally brought the retail merchants into a position where it is to their interest to bring the strike to a speedy close.

Many of these merchants have contracts with the company for lights, which are subject to the contingency of strikes, etc., and the company refuses to allow its contracts to be abrogated.

A meeting of retail merchants was held on the 14th inst., and a committee was appointed to arrange to arbitrate an adjustment of differences existing between the company and its employees. As the company claims to have nothing to arbitrate, the outcome of this attempt will be watched with interest.

In its contract with the city, the Electric Light Company is liable to the full price of the light for outrages, and as a very large proportion of lights are not

lighted each night, the amount of forfeit will naturally be large. It is estimated by the City Superintendent of Lighting that the penalty will exceed $400 per night.

The City Superintendent of Lighting has erected about 1,000 high power lights of different kinds, which have been necessary in place of the arc lights which failed to burn.

The situation seems to have settled down to a long siege, and will be only a question of endurance.

CHARLES E. PHELPS, JR.

Checking Bill-Board Nuisance.

By Frederick Law Olmsted, Jr.

The display of painted signs or posters is, within limits, a necessary and desirable thing, and a general regulation prohibiting their display would be an utterly unreasonable and clearly unconstitutional interference with private rights. On the other hand, we know that such signs and posters can be so used as to be an offense to the public out of all proportion to the private interest in them, in which case regulation is surely called for. The point we have to consider is where to draw the line; under what conditions can we consider it fair and reasonable for the public to interfere with a man's private rights in this matter and under what conditions are the courts likely to sustain such interference.

In what follows we wish it understood that we speak as a committee of laymen and that we were not authorized by the association to employ counsel. In an informal and personal way members of the committee have discussed the question with lawyers, and we believe what we say to be sound, but it is entitled to no more weight than is carried by the reasons which we give.

The regulation of the display of advertising signs might be attempted on any one of several grounds; for instance, as has been proposed in Chicago through a clause in the building regulations of a city prohibiting the erection of wooden signs or bill-boards above a certain size or within a certain distance of each other or of other structures or of the street line, on the ground of the danger of spreading fire; or they might be reduced in number by a high license fee; but the fact of the matter is simply that they are offensive to the eye. Under certain conditions, as, for instance, along a parkway or any other road where people go for the express object of avoiding offensive objects and distracting appeals to the attention, it seems to us that offensive sights displayed so as necessarily to arrest the attention are as clearly public nuisances as offensive noises so made as to disturb people in a place where they go for quiet and that their abatement may justly be ordered without compensation.

The heart of a manufacturing district is necessarily noisy, and any Board of Health which ordered a boiler factory in such a location to conduct its business silently or not at all would probably fail to secure the sanction of the courts to such an exercise of the police power; but in a quiet residence district anyone who habitually makes a great uproar in the middle of the night, even if he finds it profitable to do so, is guilty of a nuisance and can be compelled to desist without receiving any compensation for the possible loss or hardship inflicted upon him.

The question of what is a nuisance and what is not seems to be wholly a matter of degree and of judgment, the courts of to-day, we understand, classing as nuisances many practices to which earlier courts found no objection. We have been told by lawyers that there is doubt as to whether objects merely offensive to sight would be held by the courts to be nuisances, however obnoxious they might be.

To refer again to the case of the parkway: A city, let us say, has spent a million, two million or five million dollars, as the case may be, in forming a great park with the main object of providing a region of quiet rural sylvan scenery to which people can escape for rest from the worrying distractions and the ceaseless turmoil of city life. These millions are expended so that from the incessant calls upon the attention that set the strain of modern city life at so tense a pitch there may be at least a temporary relief in the quiet enjoyment of simple, restful, peaceful scenery that does not clamor even to be admired. It is, therefore, to conserve the full value of its investment in the park that the city undertakes the additional expense of a parkway which shall provide a main line of approach attractive in itself and free as far as possible from features irritating to the nerves. For this purpose land is taken and paid for; for this purpose additional sums are spent in construction and planting; and swarms of tired people seeking quiet and rest pass along the route thus prepared.

Incidentally the adjacent land is given a frontage upon the parkway and made visible to these people. The landowners then erect signs constructed and painted with the most devilish ingenuity to catch the eye at every turn, to cry out as loud as color and form and size can be made to cry, "Here we are! You can't get away from us! Look here! Look here! Look here!" Ugly and crude in the main, though sometimes not ill designed in themselves, these signs obtrude all sorts of sordid ideas upon the mind and will not let it rest. Distraction is their aim and motive, the very reverse of the motive which was held to justify the cost of the parkway.

The land was valueless as a place for displaying advertisements until the parkway was laid out, and yet this value, created wholly by the municipal expenditure on the parkway, is so used for private gain as to impair the object for which the expenditure was incurred. There can be no equity in such a state of things, and we cannot but believe that the courts would sustain a properly drawn regulation prohibiting this outrageous imposition on the public. The Park Department of the city of New York has been empowered by act of legislature to regulate advertising displays upon land fronting on the parks, but so far as we can learn the courts have never passed upon the constitutionality of this act. It has been effective in some measure because the interests involved have been rarely worth fighting for in the courts, but we understand that the legal advisers of the department have not felt at all confident that the courts would sustain the act if a case came to trial.

We recommend that the American Park and Outdoor Art Association, in conjunction with some municipal organization such as the Art Association of Chicago, endeavor to secure the adoption by a Park Commission, acting under proper legislative authority, of carefully drawn regulations governing in a clearly reasonable and moderate manner the display of advertising signs upon property fronting on the parks and open spaces under its control. The regulations and the form of the authority for passing them should be carefully examined by counsel before they are submitted for passage so that a clear and favorable test case might be presented under them to the courts, on the simple question whether the use of private property can under any circumstances be lawfully limited solely on account of the appearance presented to the public. That point once clearly established by the courts, the question of the precise limits of reasonable control can then be worked out not only as regards advertisements, but as regards many other matters vitally affecting the beauty of our daily surroundings.

It might be found reasonable to prohibit the exhibition upon the borders of parks and parkways of any advertising signs whatever beyond those relating to business carried on upon the premises or to the sale or renting of the property; it might be found reasonable to impose similar restrictions upon certain designated residence streets of a city; and country towns might very reasonably be granted local option as to whether they would permit the erection of signs advertising matters not pertaining to the property on which they were erected. Such local option would be gladly accepted by many summer resorts where the people have learned that agreeable and unmutilated scenery has a cash value to the town. All these matters, however, bordering, as they do, upon the limits of reasonable control, ought not to be entered upon until, under the most favorable conditions, the courts have been induced to give definite sanction to the principle, which we believe to be just and sound, that violent offenses against the aesthetic sense of the community are capable of becoming public nuisances subject to abatement without compensation.

Whatever the courts may now decide and whatever municipal or state regulation may now prove to be feasible, success in this movement must depend upon the desire of the public to be relieved. We ought to find out how much the public desires such relief, to give clear and forcible expression to that desire, and to direct it toward the best means of accomplishing its object. Incidentally the public desire for improvement will be developed and strengthened by the very fact of joining together and expressing the sentiment which now exists very generally in an unorganized and unvoiced manner.

For the means of attaining these ends we can do no better than to look to the experience of the English Society for Checking the Abuses of Public Advertising which has made encouraging, though by no means startling, progress upon the same lines we have in mind. The aims of the society we quote from its secretary: "We do not dream of suppressing posters or abolishing the use of temporary boardings as advertising stations. Whatever some of us may think about the taste or the morality of some of the bills so displayed, we are all agreed that we have to accept such things as an inevitable incident of modern life, and we do not think it practicable to discriminate between those that are useful and those that are superfluous, those that are in good taste, or those that are unsightly or vulgar. But we contend that there ought to be some limit as regards the

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* Excerpts from the report of the committee through its chairman, Frederick Law Olmsted, Jr., appointed by the American Park and Outdoor Art Association to consider the best methods for checking the abuses of public advertising, submitted to that organization at its last annual session, held at Chicago in June.

character, position and size of advertising stations; we think there are places where they ought not to be allowed at all; in brief, we want to substitute control for the present licenses."

So far as we can judge, the chief means employed by the society have been as follows:

First. The untiring efforts of the Honorary Secretary, Mr. Richardson Evans, and of the other officers to bring into communication individuals and organizations both local and general that have any desire to further the movement; to supply these people and these organizations with information; to help them in supplying each other with information and with the encouragement that will aid them in the work; and to supply the public press in different parts of the country with occasional items of news and occasional articles that will tend to stimulate public sentiment and increase the membership of the association.

Second. The efforts of the widely scattered members, thus supplied with information and support, to work up local public opinion by whatever means present themselves and along such lines as may appear in each locality most promising. Here is where the real work must be done, however able and self-sacrificing the officers of the society are, for ideas are not to be crammed into the public by the printed circulars of any one man or any half dozen men in the world; they must be caught up from one person to another by personal contact and discussion, and it is upon local personal efforts, however guided or helped by a central organization, that general success must depend.

"Scapa," as the name of the society is abbreviated, publishes at intervals a journal called "A Beautiful World," containing matters bearing upon the aims of the society, as well as leaflets upon special subjects which go to members and affiliated societies, furnishing useful ammunition for the local companies' campaigns. Scapa has also prepared and pressed for passage national legislation intended to give general authority for local municipal regulations of public advertising and has given active support to special bills in which particular municipalities have asked for such authority.

In this country there is less opportunity for direct expression of public opinion through a national organization, because national legislation, except as to the District of Columbia and as to the national parks, forest reserves, etc., is uncalled for and undesirable. But there is great need of supplying information and means of mutual encouragement and support for societies and individuals who wish to work up local public sentiment and ultimately secure in the several states the necessary legislation. Many organizations have already done excellent work and many others are ready to join hands in the movement, needing no more than suggestions and information. The Twentieth Century Club of Boston has sent about cards bearing the following statement, together with a copy of the statute.

"I hereby agree to permit no advertisements on my property, other than plain and inoffensive ones necessary to my tenants' business or my own. I will endeavor by every means to prevent the disfigurement of the landscape and highways.

"Town of..... State of.....

"Instructions: When the names of eight persons have been signed to this promise, place a one-cent stamp on the other side and mail it."

Municipal Art Associations in many cities and such organizations as the Appalachian Mountain Club and the Trustees of Public Reservations of Massachusetts, the National Arts Club of New York and the Public Art League of Washington, have made protests against the abuses which we condemn; these and many private individuals who hold the same general opinions would be able to work far more effectively with a little cooperation and an understanding of each other's points of view.

Here we may properly quote again from the Secretary of Scapa: "As to method, we must be content to act on the lines followed by the pioneers in other great movements of our time. It will not be enough (though it is much) to send a yearly half-crown to our society and leave the rest to chance and the Council. We can only act through our members, who, if they wish to help, must give some serious thought to the practical philosophy of the subject. Only thus can they effectively propagate the sound faith."

To enter into any more detailed discussion of methods would render this report altogether too burdensome, and we will therefore conclude with the following general recommendations.

Through its Secretary this association should undertake to enter into communication with other societies and with individuals interested in checking the abuses of public advertising; it should acquire and distribute to its members, to cognate societies and to the press facts and arguments bearing upon the subject; and it should facilitate the co-operation of those interested in the amenities of outdoor life in this as in other directions. Notwithstanding the fact that it will be a serious burden to undertake this work, and notwithstanding the fact that the public spirit of the Secretary is already imposed upon by the Association, we make our recommendation in this form, beacuse we believe it more businesslike, more likely to accomplish good results, and less wasteful of energy that all of the correspondence concerning the closely connected subjects with which the Association has to deal should be done from one office and under one direction.

BICYCLE ORDINANCE.

The Councils of Erie, Pa., are considering an ordinance which provides for the informant geting half the fine accruing from prosecution under the bicycle regulations of that city.

Public Ownership for McKeesport.

The city of McKeesport, Pa., has a lone Socialist member of the Councils, Allan Nelson, who is using his best endeavor to secure the establishment of a municipal bath-house and lighting plant. Thus far he has met with considerable encouragement among his fellow Councilmen and there seems a fair chance of success.

The free bath-house proposition involves an appropriation of $3,000 for the construction and maintenance of such an institution. The public generally is taking an interest in the scheme.

The municipal lighting proposition is not without favor. The city now gets its light from the McKeesport Light Company, and there is much dissatisfaction. It costs the city $20,000 a year for street lights, and the service is poor, only about half the lights burning at a time. The different sections of the city take turn about being in the dark. The contract has another year or two to run, and it is the intention to have a new city plant in operation before it expires.

Municipal Steamboats.

The inadequate steamboat service which private enterprise has heretofore maintained for local passenger traffic on the Thames in London appears this year to have failed entirely and to have disappeared, whereupon the "Municipal Journal," the organ of the Progressivists majority in the London County Council, declares that this "should clear the way for municipal action." "There is now only one way," it insists, "in which our great waterway can be made to serve the traveling public as a main artery from east to west, and that is for the London County Council to run municipal steamboats." With a five-minute service, penny fares, and a proper number of additional landing places, it is predicted that the enterprise would be a success financially as well as otherwise.

Public Ownership of Railways in Halle.

The city government of Halle, which has a population of about 140,000, intends to purchase the rights and property of the electrical company which now controls the street railways. This company's concession would otherwise remain in force until 1929. The development and operation of street railways, the most important means of communication in a city, can no longer be permitted to be dependent upon the private interests of a money-earning corporation. Moreover, it is one of the duties of a modern municipal government to avoid the increase of direct taxation by securing for the municipal treasury the profits of public institutions in which the citizens of the town have a personal interest, and which affect both their comfort and their business. Electric street car lines operated by the town will, moreover, increase the profits of the municipal electric plants. The present time accordingly affords a favorable opportunity for the city government of Halle to secure control of the street-car lines, especially as, owing to the compulsory completion of several unprofitable branches and to the necessity of making certain repairs, the private company's dividends sank in the past year to only 4 per cent. The negotiations with the electrical company resulted in its offering to sell its property and rights to the municipal government for 2,850,000 marks ($678,000). This offer appearing too high to the magistracy, it sought the advice of two experts. The report of one of these (Dr. Jung, of the Magdeburg electrical works) treated in a general way the question of the advisability of the purchase, which it strongly recommended. The second report was made by Over Engineer Poetz, of the Hamburg-Altona Street Car Company. The price which Mr. Poetz decided to be reasonable was 2,500,000 marks ($595,000). The attempt to induce the company to accept this amount has so far failed, the only reduction which it is willing to make being in the form of liberal terms of payment. Nevertheless, the municipal government's street railway committee decided almost unanimously to urge the magistracy to complete the purchase for 2,500,000 marks ($595,000), one-third payable October 1, 1900, and the remainder in two annual installments with 4 per cent. interest. This suggestion has been adopted by the magistracy, with only slight modifications. It is not yet known whether the electrical company will be willing to accept the offer, which is 350,000 marks ($83,000) less than the price which it suggested.—Consular Reports.

PUBLIC SAFETY.

Fire.

Firemen as Building Inspectors.

By a recent ordinance of the Council of Augusta, Ga., the Chief of the fire department has been made inspector-in-chief of all buildings within city limits.

The provisions of the ordinance requier that one man from each company shall be designated inspector of a given territory and perform the duties of the office without extra compensation.

That such inspectors shall have full authority to enter upon all premises at any time between 7 o'clock a. m. and 6 o'clock p. m. for the purpose of inspecting the buildings thereon in order to ascertain whether or not any of the ordinances passed for fire protection are being violated; whether or not there are any defective flues or other conditions permitted to exist that are liable to increase the chances of a fire; and to acquaint themselves thoroughly with the construction of all buildings so as to be better able to fight fires.

That such inspectors shall promptly report in writing to the Chief of the fire department any violation of said ordinances passed for fire protection and any conditions that increase the fire risk. It shall be the duty of the Chief to prosecute all violators of said ordinances and to promptly cause the abatement of any conditions increasing fire risks.

That the Chief of the fire department shall make a monthly report to the Chairman of the fire department committee, giving a summary of the reports made to him by the inspectors and the action thereon.

Receipt of Fire Alarms.

Upon receiving the alarm of fire every officer and member shall report for duty on the apparatus floor; the horses shall be hitched, and each company prepared to leave quarters on the word "go," to be given by the commanding officer at the instant he is assured that his company is to perform duty at the location indicated.

After the horses are hitched and the driver and tillermen become securely seated, they shall report "ready" in a loud voice, when the commanding officer shall command, "go." This shall be the signal for the doors to be opened.

They shall take the shortest route to the station indicated, except when time and wear and tear upon apparatus and horses can be saved by passing through better paved streets. The commanding officers may cause the men to dismount if the wheeling is too heavy for the horses.

To guard against collisions or accidents when proceeding to fires, the bells and gongs on all apparatus shall be rung at short intervals and always when approaching a crossing. For this purpose a wire or cord shall be kept adjusted to the bells. There shall be no reckless driving. In turning corners or driving across tracks drivers shall lessen the speed even to a walk if necessary. In crowded thoroughfares one or more men shall proceed ahead of the apparatus; also at dangerous crossings.

Rats and Matches.

President Atkinson, in a recent report of the Boston Manufacturers' Mutual Fire Company, gives the following interesting account about rats, mice and matches:

Many fires having been attributed to matches being ignited by rats or mice, it was thought best to settle the question whether or not the alleged cause was a true one. It would appear from the following statement that rats do ignite matches, while the mice have not yet been induced to do so. At the same time, we have positive evidence, not only in this test, but from discoveries made in our office when some changes were in progress, that mice do carry matches away and will work them into their nests, such a nest containing matches having been found built around a steam radiator, behind the boarding by which the outer air was conducted from the radiator into the office.

An investigation, extending over a period of nearly three months, has been made by the Inspection Department, in order to determine whether fire can be caused by rats or mice and matches. The tests were carried on in a cage made of iron pipe, covered with galvanized iron netting, in which a tin box partly filled wtih cotton waste was placed for a nest. Rats and mice, singly or several at one time, were confined for longer or shorter periods within this cage, in which sulphur matches, parlor matches and safety matches were also placed. The creatures were alternately fed and allowed to go hungry.

During the experiments with the mice, apparently none of the matches were gnawed, but two of the safety matches were carried by them into their nest. On the other hand, the rats ignited the sulphur matches by gnawing them, which is indisputable evidence that common sulphur matches can be ignited by rats.

Although the rats chewed the parlor matches into fine splinters, there were no signs that any of them took fire. However, as matches of this type readily ignite when the heads are picked with the point of a knife, it seems probable that rats are as likely to cause fire with parlor as with sulphur matches. The only reason which suggests itself in explanation of the fact that rats did not gnaw the heads of the parlor matches, is that these heads contained chlorate of potash, which was not contained in the heads of either the sulphur or the safety matches. It may be that this is obnoxious to them, and that they are attracted to the body of the match by the paraffine or other substance in which it is dipped.

Although the heads of the safety matches were eaten off by the rats, the mtaches did not take fire, which would seem to indicate that they cannot be ignited by rats. So far as these experiments showed, there is no reason to suppose that rats are more likely to attack matches when hungry than when well fed. It would be advisable to put all possible restrictions upon the use of matches in mill yards, tenements or other buildings insured, except the safety matches which can only be ignited by friction upon the box in which they are contained.

Columbus' Repair Shop.

About two months ago the new electrical machine repair shop of the fire department was completed, and the men of headquarters' house began to attend to new duties—duties that were more new to a fire department than to the firemen individually. Many of them had done such work when they were engaged in plying their own trades. They were perfectly at home with the machinery and the tools, and the use to be made of them.

The city owned the lot where the machine shop now stands. A frame shed was there before its removal, to be replaced by the present commodious addition to headquarters. The lot measured 62 1-2 feet by 18. The shed on it had been used by the city as a kind of coal shed and blacksmith shop, of an antiquated type, and of little value. For these very sensible reasons the city took this lot instead of purchasing other ground. The machine shop was constructed without cost to the city, except the small outlay of $450, at the most, as the carpentering and stonework and inside paving were done by the local firemen, instead of by contract with outside firms. The credit of the completion of this new plant and its present operation must be given to the committee on fire department in the last City Council, the members of which had advocated its construction throughout their term.

Considerable public interest must center in the experiment, as some still regard it, and in the financial side of the operation of this plant. This interest may be made still more keen, when the people are informed that already nearly the whole cost, though not large, of building and equipping this shop, has been paid for in the saving to the city. Within the two months of the conduct of the machine shop $400 have been saved the city in its expenditures.

"The fireman of headquarters now make the coils for every steamer and engine in service or out," said Chief Lauer, "and on this single item save the city $131 for every set of coils. The department still buys the tubing, however, and the elbows, but the coils proper are put in shape and placed in their position under the boiler of the engine. There is now in the repair shop the old engine from the Third street house, which was replaced by the new La France that arrived here a month ago. The old coils are being removed and an entire new set of better material substituted."

There is a certain small article widely used in the department, which used to cost the city $1.20 per dozen. They are now made at the rate of four dozen for 28 cents, or seven cents a dozen, a saving of over $1 on every dozen. The home-made article is said to be better and stronger than that which the city used to buy.

In the new shop engines and disabled department wagons are repaired, and men are engaged in making pipe fittings, blacksmithing work of all kinds, not including horseshoeing, making sets of collar hames and hitches, a most important item. For this purpose the new shop is well equipped with a forge, lathe, drill press, electric fan blasts, pits and chain hoists, etc.

A few experiments in the way of making a combination chemical and hose wagon and other things on a smaller scale, are even attempted, with good prospect of success. For this the chiefs of the department are largely responsible. A three-horse electric motor propels the machinery. In case of a fire one can stop the machinery by merely touching a knob, the action not requiring more than a second.

The Coffee Brigade.

Chaplain Charles E. Brugler of the Port Chester, N. Y., fire department has undertaken to stop the use of liquors at fires. He has invented a cart, provided with all necessary utensils for making coffee, which is to be drawn to all fires by the young men of his church. The outfit will consist of two large urns, each with a ten gallon capacity, tin cups, sugar, etc. The estimated total cost will be about $200. Besides providing coffee to the firemen, the young people will be thoroughly instructed in methods of giving "first aid to the injured."

Steamers Needed.

Chief Kerner of South Bend, Ind., gives it as his opinion that the city must eventually come to the use of fire steamers. The same view is held by other persons. This is not regarded as a reflection on the service of the standpipe and the present water supply system, but is the result of the great growth of the city which has spread over such a large territory that the capacity of the standpipe pressure is taxed to the limit and needs something to increase it in cases of serious emergency. Fire steamers, it is argued, will do this by taking the supply from the present hydrant system and elevating the streams to a greater distance than is now possible under the standpipe system. One steamer, it is thought, might prove sufficient for a long time.

Another suggested improvement relates to a new ladder supply and to ladder practice. The Morrison Hotel fire demonstrated this to the satisfaction of some of the firemen and many citizens. A well known official said: "While I do not offer it as a criticism of the department I feel that our boys ought to be put through thorough ladder practice by Chief Kerner. It appears to be a matter that has not received the attention it should have. I wish Chief Kerner would take it up."

In this connection it is felt that the city authorities have a very serious problem to deal with in the matter of electric light, telephone, telegraph and other wires strung promiscuously along the streets, particularly in the business district. Not only are these wires of great inconvenience and an almost unsurmountable obstacle when it comes to fire fighting but they are murderously dangerous. In some portions of the down town district there is such a net-work of these wires that it would be almost impossible to fight a big fire in some if the buildings near them. Some of the electric wires are poorly insulated and are therefore exceedingly dangerous.

It is argued that the authorities ought not to longer ignore this most serious condition, but should take the subject up at once and if necessary force the wires under ground or in the alleys. It is stated that the former course is really the only safe way although the latter would afford some relief and make it possible to fight a fire from a street with greater safety to the firemen. Their business is sufficiently hazardous as it is and it is felt that the element of danger ought to be eliminated as far as possible.—"The Tribune."

North Dakota State Convention.

The most successful convention in the history of the North Dakota Firemen's Association was held at Larimore, N. D., June 12-14. The following officers were elected: National delegate, Arthur Bassett, Fargo; legislative committee, A. M. Packard, Mandan; W. J. Price, Fargo; John Connolly, Grafton; president, W. A. Mickle, Grafton; first vice president, Stephen Odekirk, Casselton; second vice president, John Challey, Lisbon; secretary, H. L. Reade, Bismarck; treasurer, John Carmody, Hillsboro; board of trustees, William Sampson, Mandan; R. W. Purdon, Wahpeton; Fred Davis, Fargo. With the exception of the secretary they are all new officers. The next annual meeting will be held next June at Dickinson.

The Rescue Hook and Ladder Company of Fargo won the first prize for fast time.

New Rules in Syracuse.

Commissioner of Public Safety Peck of Syracuse has completed a thorough revision of the rules and regulations of the fire department. One of the most important changes prohibits a member of the force from selling or assigning his salary.

The Chief is given full control of the department, he is empowered to make transfers, enforce suspensions and to grant leaves of absence. He is compelled to visit each department house at least once a month, inspect the men and houses and see that the quarters are in good order.

His office hours are fixed at from 9 a. m. until 12 m., and from 2 p. m. until 4 p. m., except when on duty elsewhere and on Sundays and legal holidays. He may obtain leave of absence from the Commissioner. The Chief's assistants are required to be on duty day and night, as formerly, and to visit each engine house in their districts once a day, Sundays excepted. One clause of the rules governing the assistant chiefs gives them the power to suspend an offender where the interests of the department might suffer by delay in reporting the case to headquarters.

Captains are instructed to report in writing all accidents that occur in going to, while at, or in returning from fires, or while exercising their horses, giving name, residence or place of business of the person by whom the facts in the case may be proven. They must likewise report any accident to members of their company, stating the cause and nature of such accident. They are held responsible for the care of quarters and apparatus.

The new lieutenants are instructed to obey the commands of the captain and assist him in the performance of his duties. In the absence of the captain they are instructed to assume his duties and responsibilities. They are not allowed to take command at fires when a foreman is present. The lieutenants wear white straw hats, the same as the foreman, but single-breasted coats without trumpets.

There is nothing especially new in the rules governing house watchmen, engineers and stokers except that the engineers are ordered to give all the practical instruction possible to stokers relative to the running of the engines. Drivers are exempt from house watch duty. Substitutes are not allowed to make entries in the daily journals or to act as house watchmen. Drivers can be ordered to hose duty by the captain whenever he sees fit.

Philadelphia's Fire Losses.

The losses sustained in Philadelphia by fire insurance companies during the first half of the current year are the greatest in the history of the city for the same length of time, and are more than 76 per cent. of the total sum for the whole of the year 1899. At the end of June, last year, the losses were $1,678,255, while for the same period terminating this year they are $2,912,555, an increase of $1,234,300 over 1899. The losses by months are as follows:

	1899.	1900.
January	$210,800	$251,877
February	934,045	504,117
March	124,717	967,985
April	90,590	674,197
May	123,910	114,379
June	194,193	*400,000
Totals	$1,678,255	$2,912,555

*Estimated.

As against losses aggregating $2,912,555, the insurance companies received in premiums the sum of $1,700,000, involving a balance of $1,212,000 on the wrong side of the ledger.

That portion of the city within the bounds of the Delaware River, Broad, Walnut and Race streets, known as the congested or commercial district, sustained about three-fourths of the losses. This fact, insurance men claim, is a strong argument for a more adequate water supply.

Constantinople Fire Department.

A gentleman, recently returned from Europe, gives the following description of the equipment and methods employed by the city of Constantinople for the extinguishment of fires. He said:

"The 'engines' used are very primitive, notwithstanding the city has a population of over a million people, and are carried to the fires on long poles by the firemen. They consist of square tanks, to which a single hand-pump is attached. The tank is filled and refilled, as the water is forced out through the hose, which is a little larger than the ordinary garden hose, and is carried to the fire on a spool by one of the firemen. Fire alarms are sent from the Galatea tower, where men are on the lookout, who display different colored flags, or lights, when a fire is discovered, thus indicating the quarter of the city in which the fire is located.

"The men at the fire stations watch the tower, and when an alarm is given take the apparatus and run, barefooted, to the fire. When the burning building is found, no work is done until it is ascertained from the owner how much will be paid to have the fire extinguished. When the "dicker is completed the men go to work with a will. Constantinople firemen are good climbers, and carry the small lines of hose to all parts of the burning buildings. The buildings of the city are largely constructed of wood, and a large number of fires occur which the firemen are unable to handle; many buildings are consequently destroyed.

"On every pump there is carried a large dial of an incomprehensible symbolic design. It is a Mohammedan emblem and is supposed to have great virtue and to keep the firemen from harm."

Boston's Automobile Engine.

The horseless fire engine in Boston seems to be a success. The engine can throw 1,350 gallons of water a minute, which is forced through 50 feet of leading hose, and out of a 1¾-inch nozzle, for a distance of 338 feet. The city has two engines of this kind, and will place another one in service shortly. It is estimated that the cost of keeping the constant steam pressure of 90 pounds in the auxiliary boiler is about the same as the cost of keeping three horses in the stalls. In addition to the two engines in Boston, there is one at Hartford, and one at New Orleans. Pittsburg has placed a contract for one with the builders.

Salvage Corps Not Exempt.

The Ohio state board of tax remission has refused to remit the taxes assessed against the Cincinnati board of underwriters' salvage corps. The board is composed of the Governor, the Auditor and Attorney General. They called to their assistance in this question the state Insurance Commissioner, Mr. Vorys.

The salvage corps is an enterprise entered into by the members of the Underwriters' Association of Cincinnati, with a view to reducing the losses in fires where they have risks. They have secured quite an extensive equipment, and it is this property they desired to have relieved of taxation. The ground urged was that the property was for the public use and benefit. The board could not see it in that light, and the application was rejected. It was made several months ago.

Insurance and Electric Wiring.

The representatives of the leading fire insurance companies of Galveston, Tex., at a recent meeting passed the following resolution:

We, the undersigned insurance agents of the city of Galveston, do, upon our word of honor, pledge ourselves, individually and collectively, and the firms of which we are members, not to accept or underwrite any risk whatever in companies we now represent, or may hereafter represent, after July 15, 1900, which is not approved by A. G. Gouens, insurance inspector of the Galveston local board, for defects in use of electricity, such as defective wiring and trolley connections.

We further pledge ourselves to cancel any policy heretofore issued by any of us on risks now in force reported recently by the local board inspector as defective on account of trolley current connection and defective wiring, a list of which is on file in his office, unless such defects are remedied on or before July 15, 1900, at 12 o'clock noon.

Fire Department Items.

S. D. Hollenbeck has been appointed state fire marshal of Ohio. This is an accordance with the law passed by the legislature at its last session.

* * *

The New Jersey State Firemen's Home, located at Boonton, was dedicated on June 16. The total cost of the home, including fifty-six acres of land, is $64,900.

* * *

Sacramento, Cal., has sought to bring its fire department up to date by the addition of the gamewell system of fire alarm telegraph. It is likely her ambition will not be realized because of the opposition of some benighted citizens, who reason that the old system is good enough.

The city of Williamsport, Pa., is to have a new engine house in the west end.

* * *

The Syracuse (N. Y.) department is to have a third assistant chief added to the force.

* * *

The Pittsburg department is to have an automobile hose carriage to be used with the automobile fire engine recently purchased.

* * *

Bloomington, Ill., had a $2,000,000 fire in June. It got so far beyond the control of the firemen, that dynamite was used to demolish buildings to arrest the progress of the flames.

* * *

Select Councilmen Chittenden and Vaughan of Scranton, Pa., are endeavoring to secure the passage of an ordinance which will change the fire department from a semi-volunteer to a paid service.

* * *

The eighth annual tournament of the Nebraska State Firemen's Association will be held at York July 24-26. A well-filled program, with interesting events and prizes, has been prepared for the occasion.

* * *

Chief Lutz of the Harrisburg, Pa., fire department is endeavoring to improve the equipment of the different companies. A new combination chemical engine and hose wagon has been purchased and two of the hose reels are being turned into hose wagons. The department has also just received 2,000 feet of new hose.

* * *

Chief Laure, says a Columbus paper, recently received a letter of commendation from a Columbus, O., firm for the good judgment displayed in fighting the fire which broke out in its place of business. The firm estimates that by not turning on water, but using chemicals instead, many hundreds of dollars were saved.

* * *

The city of York, Pa., is to have a Firemen's monument. The pedestal is made of granite and is eight feet high by four feet square. It will be surmounted by a handsome bronze figure of a fireman about six feet in height. It will be completed and dedicated next fall. The Rescue Steam Fire Engine and Hose Company, No. 4, of York, is the donor.

* * *

Chief Larkin of Dayton, O., is to be congratulated on the success of his efforts to bring the equipment of his department up to the highest standard. Contracts for new apparatus, aggregating $30,000, have just been given to several firms, including the American Fire Engine Company of Cincinnati; the La France Engine Company of Elmira, N. Y.; and the Fire Extinguisher Company of Chicago.

* * *

The Minneapolis department had its annual inspection on June 6. Each company went through three different drills, and in most of the houses remarkable hitching time was made. Hose Company No. 14 made the best time for the three hitches. The time was seven seconds from the stalls, two seconds standing and 10 1-2 seconds out of the house. Engine Company No. 9, four horses, made the best time, hitching in nine seconds, the horses coming from their stalls. Of the truck companies, No. 4 made the best record, hitching four horses in nine seconds, the animals coming from the stalls 61 feet away from the apparatus.

The Rochester, N. Y., department now has two life saving corps fully organized and equipped with the necessary apparatus, including scaling ladders, belts, life-nets, etc.

* * *

"City Government" is indebted to Secretary E. A. Miller of Kearney, Neb., for a copy of the "Proceedings of the eighteenth annual convention of the Nebraska State Volunteer Firemen's Association."

* * *

Director of Public Safety Hyman, of Cleveland, recently dismissed from service in the fire department a fireman who would not pay his debts. The Director declares his intention to enforce the rule relating to all such cases.

* * *

Insurance Commissioner Stevens of Michigan favors the appointment of a state fire marshal, as one-half the fires are from carelessness or corruption, and the companies who pay over $160,000 a year to citizens of the state are entitled to protection.

* * *

The Select Council of Altoona, Pa., conceived the absurd idea that the idle time of the firemen of that city could be utilized to good advantage in another branch of the city's service, viz., sweeping the streets. The members of the department have registered a vigorous "kick" with the Chief to the effect that if such an ordinance is passed and they be required to sweep the streets they will resign, even to the last man.

HOURS FOR STREET SPRINKLING.

The Councils of Harrisburg, Pa., have passed a resolution forbidding the sprinkling of the paved streets of the city between the hours of 6 and 10 p. m. The resolution was passed upon the urgent request of the bicyclists of the city after several severe accidents caused by wheels slipping on the wet paving.

* * *

OVERHANGING SIGN NUISANCE.

Mayor Bowden of Jacksonville, Fla., recently visited some northern cities. The absence of the overhanging sign was one contrast between his own and the northern city, which he noticed. He remarked to a friend: "I would like to see these signs taken away, and, if possible, the balconies removed. They not only appear unsightly, but give the town a 'back-numberish' sort of look that works to its disadvantage.

"I do not think the removal of these signs will work any hardship on the merchants; in fact, I believe if all the signs and balconies were removed the increased light in the stores and the unobstructed view of the street would be an advantage to them."

* * *

THE CITY REMOVED THE POLES.

The city of Geneva, N. Y., some time ago, for a good and sufficient reason, ordered the electric companies to remove their poles from the principal business streets. But the corporations chose to ignore the order and let them remain. Some of the city officials determined to treat the companies with some of their own medicine. So, without announcing their intention before-hand, they quietly made preparation for the forcible removal of the poles. Adopting the favorite tactics of corporations, the city officials selected Sunday to do the work so an injunction could not be served on them.

Police.

Youngstown Will Use Bertillion System.

The City Commissioners of Youngstown, O., have given Chief McDowell permission to use the Bertillion system of identification in that city. In every one of his annual reports the chief has asked for the Bertillion system, but former commissioners did not seem to realize the importance of the system.

The Bertillion system is based on the fact that however much a criminal may change his appearance and disguise himself, he cannot change the length and size of his bones. In the Bertillion system the circumference, length and width of the skull, the length of one of the bones of the arm and one of the bones of the leg, and several other bones are most accurately measured. No two human beings have measurements that coincide, so that the Bertillion measurements are absolutely certain when it comes to identifying a criminal who has once been measured by the system. Besides the measurements, notes of the peculiarities of the prisoner, the color of his hair and eyes and his complexion, his length and weight are made, and two photographs, front and side views, are taken. All of this data is sent to a central bureau in Chicago, where hundreds of thousands of descriptions are kept on file in such an ingenious manner that any single description can be obtained in a few minutes.

Detroit's New Station House.

The new Trumbull avenue police station of the city of Detroit, which has recently been completed, is now occupied by the officers and men belonging to that precinct.

It is one of the best equipped in the city and has a substantial, almost inviting appearance. The architecture is attractive and gives the station the appearance of being massive while in reality it only occupies a small space of ground. It is built of sandstone and brick, which is solid and durable. While the exterior impresses one favorably the interior makes even a better showing. The general office is large and airy. It has an inlaid floor. The walls are half inlaid and the remainder plastered. The decorating work, so far as completed, indicates that the general room will be artistic.

In the rear of the office are the seven iron cells with which the station is equipped. On either side of the big general room are two offices for the captain and lieutenant. On the second story is an assembly or sleeping room, which is large and well ventilated. Right off this room is the locker room, with 43 closets for the policemen to keep their official garments. A small hall which leads to the lockers also directs the attention to a splendid shower bath which has been put in for the accommodation of the policemen. On this floor there is also a room each for the captain and lieutenant on duty. The third story has not been fixed up yet, but when completed there will be an abundance of space, so that if it is necessary at any time in the future to increase the number of policemen at this station room can be made for them.

The building is fitted throughout with electric light and gas and has the most modern conveniences.

A Police Superintendent's "O. K."

Charges by no means creditable have been made from time to time against the administration of Mayor Taggart of Indianapolis. It is said that many persons are showing small cards upon which is written "O. K. J. F. Q." J. F. Q. are the initials of James F. Quigley, Superintendent of Police, and it is said that bearers of the cards have no fear of arrest when the card is shown to policemen. When gambling-houses, shady hotels, and wine-rooms are raided the bearers of these cards are said to be allowed to go unmolested upon showing them to the police who make the raid. Nearly all young men in Indianapolis of sporting proclivities possess these cards, which also secure immunity from arrest for violation of the ordinance which requires bicycle owners to pay a license for their wheels. There must be a lax state of public morals in Indianapolis if the people will permit the issuing of such licenses to violate the law. Even in New York they do not do things so brazenly. It is to be hoped that no other Superintendent of Police will adopt the Indianapolis idea.—"Tribune," Chicago.

Police Items.

Hereafter policemen of the Columbus, O., department must be 5 feet 9 inches, or over, in height.

* * *

The police force of Portland, Ind., has been increased by the acquisition of two man-hunters, bloodhounds of noted pedigree.

* * *

Chief of Police Joseph Kipley of Chicago is issuing a newspaper which tells the methods of criminals and offers advice as to the means of foiling them.

* * *

Chief McDowell of Youngstown, O., has had a sufficient number of new men added to his force to permit the adoption of the permanent beat system. The old men will perform day duty and the young men will go on at night.

* * *

The chief of police of Lancaster, Pa., has instituted the custom of having monthly pistol practice for the men of the force. He claims that the police are less likely to shoot through excitement if they are familiar with their weapon and thus the danger of hitting the wrong person is overcome to a certain extent.

* * *

There is a movement on foot in Dallas, Texas, to have the city buy horses for the mounted policemen. The horses are now owned by the officers, and they receive an extra allowance of $15 per month on their salaries for the use of the mounts. The officers feed and shoe the animals at their own expense, and in case a horse becomes unfit for duty they are required to purchase another.

A Municipal Forest.

Brunswick, Maine, a town of about 7,000 inhabitants, is thought to be the first municipality in the United States to undertake forest planting on a large scale, or what is practically the old world institution of a town forest. The town owns a tract of about 1,000 acres, and at a recent meeting of the Council $100 was appropriated to improve this land by planting it in white pine. Town forests are common in Europe, and often furnish a large part of the municipal revenue. The division of forestry of the United States department of agriculture will assist in the work in Brunswick.

Health.

Buffalo's Experience With Rabies.

In June Health Officer Wende, of Buffalo, was invited to visit Rochester and relate his experience with the recent "mad-dog epidemic" in his city. The address was one of timely interest to Rochester, as an outbreak of rabies is threatened.

"People," he said, "think more of the pleasure of dogs than they do of the health of the people. It is pure cussedness on their part, partly due to superstition and partly due to ignorance and skpeticism. Each individual case is likely to start an epidemic. There is a false notion as to the disease and doubt as to its materiality and means of removal. Were some of these people to witness the sufferings of one in the throes of death from it he would soon change his views.

"People hide dogs when they hear that an epidemic is prevalent. They do not want their pets to be subjected to annoyance, but they are not charitable enough to have a thought for the rest of humanity. Recent clinics in Buffalo show these three symptoms in infected animals: First, restlessness; second, snapping, biting and eating foreign bodies; third, straying away from home.

"When dogs are infected you can easily tell them. They that were once tractable and docile, become furious and aggressive, they bite and snap at everything; their vocal chords are paralyzed and the heavy bark is transformed into a screech; they are not afraid of blows. They know no no pain, danger or even death. You may stand over them with a club and make an attacking gesture, yet they pay no attention to it. Impending danger seems to have no realization in their brains when suffering. Another symptom is the pouching out of the throat.

"During the epidemic in Buffalo, 4,429 dogs were killed. Between April 1, 1899, and April 1, 1900, 256 cases were investigated by the Buffalo officials.

"Thirty-four patients have been sent to the Pasteur Institute, New York, from Erie county for treatment for rabies. Four persons in Buffalo and suburbs who were bitten by mad animals died from the frightful malady.

"The first case was that of the Thressold boy at Checktowaga. Eighty-one days after the boy was bitten he died at the Pasteur Institute. Alvin Fisher was the next one. He was at a dance when the dog rushed into the room. In ejecting the animal he was bitten in the hand. Forty days later he was a corpse. Mariana Dollitzki was bitten by a mongrel dog and died three days after the disease manifested itself."

In conclusion, Dr. Wende set forth a platform to cope with the disease, giving fourteen reasons. First, he recommended that the police have supervision over the tagging and registering of dogs; that a penalty and fine be provided and enforced. Second, that all dogs in the city be registered; third, that all wear muzzles; fourth, that the police distribute cards containing information relative to the disease and the ordinances provided by law for registration, tagging, etc.; fifth, that the police make a periodical census of all dogs; sixth, that in the case of hydrophobia all dogs suspected be quarantined; seventh, that an extra force of dog catchers be provided to enforce the law; eighth, that the police be in-

structed to destroy at sight any dog suffering with the disease; ninth, that all animals bitten be destroyed; tenth, that the stables or places in which infected animals have been kept be thoroughly disinfected; eleventh, that the bodies of all animals infected with the disease be cremated; twelfth, when necessary to transport persons or animals infected with the disease that it be done in a closed vehicle.

To the physicians persent the most interesting point was the description of an autopsy on a victim of rabies. The Buffalo cases developed the fact that from 10 to 30 persons and animals were infected by bites from one dog afflicted with rabies.

Health Items.

The city of Binghamton, N. Y., is agitating the question of constructing free public baths.

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The municipal bath-house, recently opened in Syracuse, N. Y., is liberally patronized.

* * *

Albany, N. Y., will soon be added to the number of cities that supplies free public baths to its citizens.

* * *

James E. Roberts of Indianapolis, Ind., has offered to give to the city a free public bath-house, costing $5,000 or more.

* * *

The Columbus (O.) health department offers to fumigate, free of expense, houses wherein deaths have resulted from tuberculosis.

* * *

The New Haven Congregational Club has passed resolutions urging upon the city the construction and maintenance of free public baths.

* * *

The board of health of Scranton, Pa., is considering the advisability of applying the tuberculin test to all herds of cattle which supply milk for the city's use.

* * *

The Health Officer of Syracuse asserts that of the several thousand cattle that have been given the tuberculin test only about twenty were found to be tuberculous.

* * *

Toledo, O., and McKeesport, Pa., have "weighed in the balance" the dry closet system in use in their public schools and have found it wanting. They propose to effect a change speedily.

* * *

One of the public scavengers of Chicago has been using the garbage collected on his route to fatten cattle. Health Officer Reynolds learned of the practice and immediately stopped it.

* * *

The tuberculosis committee of the New York State Board of Health reports that during the month of May, 1,075 head of cattle were subjected to the tuberculosis test, of which number thirty-three were condemned and six destroyed. Since January 1st 1,443 head of cattle have been tuberculin tested and eighty-four condemned and fifty-two destroyed. Of the total number tested, 1,242 were grades, or common stock, eighty were Holsteins, and seventy Jerseys. Forty-seven grades, four Jerseys and one Holstein have been destroyed.

Municipal Pure Milk Stations.

Under the direction of Health Officer Goler of Rochester, N. Y., a successful plan for decreasing the mortality of children under five years of age—especially during the summer months—has been in operation for several years. Not the least important part of this plan is the establishment of pure milk stations. In regard to these Dr. Goler said to a representative of "City Government:"

"The Health Department expects to open the pure milk stations as usual on July 5th. There will be five stations, and they will supply pure milk until they are closed, September 1st. The results of this experiment yearly in reducing the number of deaths of infants have been marked. The object of the plan is to educate the people in the importance of providing pure milk for infants in hot weather. If the department should not open the stations next year an opportunity would be given for noting how successful had been the plan from the educational point of view. If many parents should then pasteurize the milk instead of feeding it to infants just as it comes from the milk dealer, we should feel that our efforts had been successful.

"With the approach of warm weather the necessity of improving the condition of the milk supply becomes very great. An examination of the May report showing the large number of bacteria per cubic centimeter in thirty-three samples of milk is not encouraging. Unless the farmers and dairymen can be taught to care for their cans, stables, utensils and milk in a more cleanly manner, and when people will consent to pay them a living price for milk, then, and only then, will a more cleanly milk be obtained."

The most unique feature about the whole plan is the manner of protecting the source of supply. Continuing, the doctor described that as follows:

"The herd of cows which supplies these stations will be under my supervision, or that of my assistants. I have employed an intelligent and thoroughly competent young woman to superintend the affairs at the dairy farm, located a few miles out of the city.

"The herd will be made up of picked and well-bred cows, healthy and vigorous. The stables will be kept scrupulously clean, like the hall in a hospital. One great source of bacterial milk lies in the presence of floating dust atoms, which subside into the pails and poison the pure fluid with their presence. To obviate this the cows, when milked will be covered each one with an aseptic sheet, whose extent will preclude any possibility of dust reaching the pails. These will be sterilized each morning.

"The men who do the milking will be compelled to cleanse thoroughly their hands in an aseptic lotion, as surgeons do before an operation. Few hired men this world has known will be as clean as they who will thus officiate each morning.

"The milk, when the pails have been filled will be drawn off into sterlized bottles, of various sizes, sealed and certified by the superintendent of the central station.

"The superintendent's quarters will be close to the barn, and each morning at 5 o'clock her duties will begin. Inspection of the pails, bottles, cans, stables, oversight at the milking, in order that no precaution shall be carelessly or thoughtlessly omtited are but a few of this young woman's duties, as regular as the risnig of the sun.

"Not one drop of milk will be allowed to leave the farm that is not contained in a bottle bearing the superintendent's seal, certificate and signature. The bottles will be carted to the city and distributed at the dispensary stations for public use."

Disease Germs In Women's Skirts.

That long skirts are a serious menace to public health has apparently been proved by Dr. Casagrandi, a distinguished scientist of Rome. At a congress which was held in the Eternal City the other day he told his fellow colleagues that he had made some simple experiments which had convinced him that the fashion of wearing trailing skirts ought at once to be abandoned.

He had, he said, employed a number of women, wearing long skirts, to walk for one hour through the streets of the city and, after their promenade was over, he had taken their skirts and had submitted them to a careful examination. As a result he had found on each skirt large colonies of noxious germs, including those of influenza, consumption, typhoid fever and tetanus. The bacilli of minor diseases were also well represented on each skirt.

Dr. Casagrandi maintained that in view of these facts women, and especially mothers, ought at once to stop wearing long skirts, and the other members of the congress unhesitatingly expressed the same opinion and passed a resolution to the same effect. A French writer, commenting on these experiments, says that the sooner this time comes the better pleased will be all those who have made a study of hygiene and who know how dangerous to public health the long skirt is.

Municipal Tenement Houses in Glasgow.

At a recent socialist and labor conference in Glasgow, among other things, the matter of tenement houses in Glasgow was particularly discussed, and a good deal of dissatisfaction expressed with the municipal "family homes." The enterprise does not seem to be satisfactory to anyone. There are complaints of overcrowding, dirt, and noise on one side, and on the other, of the rapidly increasing debt of the city. The city debt resembles already that of a state rather than of a city. The providing of homes and lodging houses seems to have attracted a large number of the very poor to Glasgow, who are taking advantage of what the city gives. A local official who speaks with authority, mentions a curious abuse connected with the model logding houses. A number of women actually conspire with their husbands to go into the poorhouse while the men enjoy the luxuries of the model lodging house.

The London "Times" says that the condition of things in Glasgow is not conclusive, but is, however, "a warning of the evils which come in abundance whenever the rates are kept on tap for the benefit of any one class. The lodging-houses of the city, it is claimed, are paying a dividend of five per cent., but the corporation 'family homes' are costing the municipality some hundreds of pounds a year."

Kansas City employs twenty garbage wagons, and yet there are complaints of empty garbage cans.

Dog Ordinances Abroad.

Hydrophobia having caused alarm at other cities, at the request of the Commissioners of the District of Columbia, Washington as well as in Buffalo and the State Department instructed various consular officers in Europe to report whether dogs are required to be muzzled in foreign cities and if the results have proved satisfactory. The answers are calculated to relieve the minds of such local officers as have allowed their tenderness for the dogs, or for the feelings of the owners of the animals, to outweigh consideration for the public safety. Consul General Mason writes from Berlin that in that city, Frankfort, and so far as he can ascertain, in all cities and large towns of Germany, dogs are required to be muzzled whenever in any street or public place, and this regulation is enforced in cities even when the dog is led or held in leash by the owner, or is harnessed for working purposes to a cart or other vehicle. The ordinances are very strict and are carried out to the letter, with the effect that hydrophobia is practically unknown in Germany. The mention of working dogs in cities may surprise Americans of the younger generation, but many of their seniors will remember that in the years of immigration of the German peasantry, dogs attached to carts or small wagons were a familiar sight, a man or woman generally assisting the dog to pull the load. In England a frightful epidemic of hydrophobia which occurred a few years ago has been suppressed and the disease apparently eradicated by stringent laws. In both England and Germany the muzzles must be patterned and attached according to prescribed rule. Enforcement of the ordinances is vigorous and impartial, the penalties severe.

Expectorating Regulations.

The Health Board of New York has amended its ordinance forbidding expectoration in cars and other public places. It provides that in cigar manufactories and in printing offices proprietors must furnish cuspidors in proportion to one to every two persons employed in such places. Further, notices must be posted in all public conveyances forbidding expectoration. Now the patrons of ferryboats want to know what smokers are to do in regular smoking cabins. There are no cuspidors provided, and many persons who smoke feel the need of them. Most of the smoking cabins on ferryboats are merely places in which to sit while the boats cross the rivers, without any particular convenience. If the Health Board insists upon its rules being strictly enforced it is probable that the ferry companies will find themselves compelled to furnish cuspidors in the smoking cabins.

* * *

The following stiff regulation has been in operation in Richmond, Va., since April, 1899:

"That it shall be unlawful for any person to expectorate upon, or throw fruit skins or peelings on the sidewalks or floors of street cars, public elevators, or public halls.

"Any violation of this ordinance shall subject the offender to a fine of not less than two or more than five dollars."

* * *

The spitting ordinance of Indianapolis is being enforced, and the police say they are having little or no trouble about it. The publicity given the matter prepared the expectorating citizen for the new order of things, and now when he desires to unload the result of his maxillary grind he steps briskly to the curb and lets fly at the gutter, no matter how urgent his business elsewhere.

Street Railway Benevolence.

Several kind-hearted women of Syracuse, N. Y., recently planned to give 250 of the children in the Onondaga County Orphan Asylum a ride to Edwards Falls. They expected to pay the Suburban Company, but their money was refused.

The example set by the Surburban is to be followed by the Rapid Transit Company, and it has volunteered to give when desired the use of enough cars to take the 300 children for an outing at the Valley.

Passengers Need Not Pay.

In large cities passengers on the street railway systems have often had the annoying experience of being compelled to sit in a car perhaps ten minutes waiting till some obstruction has been removed from the track. To the business man, anxious to reach his office as soon as possible, delay of this sort is most vexatious and the seeming indifference of the conductor and motorman, who stand about with their hands in their pockets or chatting with the men running the next car, is very exasperating.

But if the ruling of Judge Frazer, of Pittsburg, is to stand as the law, traction companies are likely to be more careful about blockades and employes will get orders to assist in their removal wherever practicable. The judge holds that the company cannot collect fare from a passenger who wishes to leave the car because of a prolonged stoppage. A passenger who refused to comply with the conductor's demand for a nickel was arrested and promptly sued the company for damages, the jury giving him $500 as salve for his outraged feelings.

Dr. Gladden Favors Public Ownership.

The Rev. Dr. Gladden, of Columbus, O., recently elected to the Aldermanic Council of that city, is evolving some novel ideas. One suggests and favors the right of a citizen to vote in two or more places. In support of this idea he is reported to have said in a recent sermon, "municipal election franchises ought to be so enlarged that the men who spend their days in the city—certainly all those who own property or occupy premises in the city—even if they reside elsewhere, should be permitted to vote in municipal elections. There is no reason why a man who works in Columbus and sleeps in Worthington should not vote for municipal officers in both places, but only at one place in state and national elections. Dr. Gladden referred to the fact that a man holding stock in two similar corporations is allowed to vote in both and any man who works in the city and sleeps in the suburban village is virtually a stockholder in both; the laws of England recognize this right.

He referred to the question of interurban and street railways, also, expressing the idea that they should be owned by the people and not by any corporation. He predicted that the day will come when it will appear not much more absurd for a community to let out its avenues of communication to private companies or parties to be operated by them for their own profit, than it would be for a man to let out his arteries and veins to somebody, and depend on this vascular contractor for the supply of the vital current by which his life is sustained.

Celery as a Carrier of Infection.

The "Maryland Medical Journal" points out in a recent issue the danger of contracting typhoid fever from truck gardens, with their free use of fertilizers from all sources. An epidemic of typhoid fever occurring in a state institution was apparently traced to the use of celery grown on some sewage-fertilized grounds, the practice of banking up the stalks making these plants especially adapted to receiving and holding the germs. As soon as the use of the plant was stopped the epidemic diminished, and finally ceased altogether. The facts indicate the need of caution in using this popular vegetable, which, with its corrugated stems, etiolated by banking up with earth often saturated with fertilizers of one kind or another, and generally eaten raw, might very possibly carry disease germs.

Grooved Rails Ordered.

The Board of Aldermen of Chicago recently passed an ordinance requiring that hereafter, whenever a street having car tracks is paved, grooved rails shall be laid. This is an important step and will go a long ways toward not only securing, but maintaining good, smooth pavements.

The advantages of the grooved rail, the superiority of which has long been recognized not only in foreign but in our own cities east of here, are chiefly four. First, it involves the least possible obstacle to a smooth and continuous street surface, the only depression being the narrow grove in which the thin and shallok flange of the wheel runs. Second, it saves the unnumbered breakdowns which occur in the efforts of loaded teams to "turn out" of the tram rails. In the third place, it precludes the current practice of driving vehicles with one wheel in the outer tram rail and the other on the pavement, and, finally, it presents no obstacle, such as the tram rail does, to the cleaning of the streets.

THE LAKE SHORE & MICHIGAN SOUTHERN RAILWAY.

This railway is the only double-track line between Buffalo and Chicago; and indeed, in connection with the New York Central and the Boston & Albany Railroads, forms the only double-track route between Chicago, New York City and Boston.

It is the most interesting route between the East and West, traversing the richest and finest portion of the Middle States; also is it the most comfortable by reason of its excellent roadbed and freedom from curves. In the opinion of those experienced in travel it has no superior in perfectness of roadbed, punctuality and elegance of service, and the comfort and care of its patrons.

The Lake Shore & Michigan Southern Railway is prominent before the people through its operation of the famous fast mail trains for the United States Government; also as the route of the 20 hours trains, Chicago to New York, during the World's Fair in the former city; as the route of the present 24 hours train Chicago to New York; and finally, as the railway which on October 24th, 1895, won the world's record for fast, long distance speed, making the phenomenal run of 510.1 miles in 470 minutes, 20 seconds, or 65.07 miles per hour.

The city of La Crosse, Wis., is to try the garbage farm on a small scale. It proposes to utilize three or four acres of land which it owns. The soil is almost pure sand. The garbage will be dumped in trenches and buried.

PUBLIC WORKS.

Water.

The Norfolk, Va., Filter Plant.*

By Edmund B. Weston, Consulting Engineer.

In compliance with an invitation from your secretary, I will endeavor to briefly describe a filter plant which has recently been built at Norfolk, Va., in accordance with plans and specifications that were prepared under my direction.

The filters of the plant are of the Jewell Subsidence Gravity type, and sulphate of alumina is used as a coagulant.

The filters and their necessary auxiliaries were furnished and installed by the New York Filter Manufacturing Company of New York.

The construction of the filter building and the other work required was done by the city of Norfolk, under the direction of Mr. W. T. Brooke, City Engineer of Norfolk, and Mr. George W. Wright, Chief Engineer of the Norfolk Water Works.

The principal parts of a Jewell Subsidence Gravity Filter and the appliances required in connection with the use of sulphate of alumina, for the purification of water, may be roughly described as:

First. The apparatus used for the preparation and addition of the sulphate of alumina solution.

Second. The subsidence basin in which coagulation takes place, and the water partially clarified by subsidence.

Third. The filter-bed in which the purification is completed.

Fourth. The automatic controller for keeping the velocity of filtration constant.

The filter plant at Norfolk first went into operation in the latter part of August, 1899. It has a capacity of 8,000,000 gallons per 24 hours.

The original contract called for 12 filters having an available capacity of 6,000,000 gallons per 24 hours; but soon after the filter plant went into operation, the filter building having been built sufficiently large for the purpose, 4 additional filters were installed, making the total capacity 8,000,000 gallons.

The filtered water is discharged into a flume in the filter building, from whence it flows to a filtered water reservoir outside of the building.

The capacity of the filtered water reservoir is about 1,000,000 gallons.

The supplementary subsidence basin is practically divided into two divisions. This was done for the purpose of cleaning. The basin is used as a whole except when one of the divisions is being cleaned, then only the other division is in service. It is estimated that it will take 4 days to clean each of the divisions, and that it will be necessary to clean them 3 times a year. The total capacity of the basin is about 5,000,000 gallons, and the time for coagulation and subsidence that can be had in the entire basin is about 15 hours and in one of the divisions of the basin about 6 hours.

The raw water, the quantity of which is regulated by a sluice-gate, first enters the inlet chamber leading from Lake Wright to the basin. The sulphate of alumina solution is fed by gravity to the raw water as it enters the inlet chamber and thoroughly mixed with the raw water as it passes by the four baffle boards which the inlet chamber contains.

The three division walls in the basin are built of sheet piling and are practically water tight. The triangular enclosure at the upper end of the basin in which the inlet chamber terminates is for distributing the water when one divisoin of the basin is being cleaned. The openings in all of the division walls are intended to represent gates. At the lower end of the basin, separated by a division wall, is the suction chamber from which the pump that supplies the filters takes the water. The top of the main division wall running through the center of the basin, is about 3 feet lower than the tops of the division walls of the triangular enclosure and suction chamber, which are at the elevation of extreme high water.

A drainage pump for pumping out the deposit in the basin when it is cleaned is located in a small pump house at the lower part of the basin at the left of the suction chamber. The suction pipe of this pump terminates in two parts, one in the lower end of each of the two main divisions of the basin.

To aid in cleaning there is an open drain built in the bottom of each of the two large divisions in the basin. The drains are constructed of plank and are four feet wide and one foot deep, and run, centrally, from the gates in the triangular division wall at the upper end of the basin to the suction pipes of the drainage pump.

Each of the two main divisions in the basin is cleaned as follows:

1st, the water is drained out of the division which is to be cleaned. 2d, a sufficient quantity of water is let into the central drain from the triangular enclosure at the upper end of the basin and the drainage pump started, thereby establishing a rapid current through the drain. 3d, the accumulated deposit is scraped or pushed into the drain, where it mixes with the current of water and flows to the suction pipe of the drainage pump. The water and deposit is then raised by the pump about 10 feet and then flows by gravity through a pipe about 200 feet long, leading from the pump house to some marsh land which is drained by a natural creek.

Nearly all of the suspended matter originally contained in the raw water, as well as a large percentage of the bacteria and color and the greater part of the precipitate of aluminum hydrate brought about by the addition of the sulphate of alumina, is removed in the passage of the water through the supplementary subsidence basin.

The available capacity of each filter is 500,000 gallons per 24 hours, and the rate of filtration of per acre per 24 hours is about 127,000,000 gallons.

The height of the filters is 16 feet.

The depth of the filter-beds is 4 feet.

The filter-beds of the first 12 filters that were installed are composed of screened sand and crushed marble, the proportions being two-thirds of sand and one-third of crushed marble. The "effective size" of the sand used is 0.40 and the "uniformity coefficient" 1.9. The filter-beds of the last 4 filters that were installed are composed entirely of the same quality of sand and do not contain any crushed marble.

The crushed marble was placed in the filter-beds as a precaution, as the preliminary examinations of the raw water that were made seemed to indicate that possibly, at times, the water might not be sufficiently alkaline to properly act upon the quantity of sulphate of alumina which might be required. Therefore, as marble is a limestone, crushed marble was placed in the filter-beds in order to slightly increase the alkalinity of the water as it passed through the filter-beds, as actual experience, elsewhere, had indicated that crushed marble was suitable for the purpose and would retain its efficiency for a number of years. It has been demonstrated, however, since the filter plant went into operation, that the crushed marble in the filter-beds at Norfolk is not necessary, as the raw water is sufficiently alkaline at all times, and consequently the filter-beds of the last 4 filters that were installed do not contain any crushed marble.

As the question is sometimes asked as to the relation between the alkalinity of a natural water and the use of sulphate of alumina when it is used in connection with the purification of the natural water, I will briefly state my understanding in regard to it:

Alkalinity is generally expressed as calcium carbonate, or carbonate of lime. When a proper quantity of sulphate of alumina is added to a natural water containing an alkaline substance, for example carbonate of lime, an exchange takes place. Instead of sulphate of alumina and carbonate of lime, there is produced carbonate of alumina and harmless sulphate of lime. But the carbonate of alumina immediately decomposes, giving off carbon dioxide and forms aluminum hydrate, which acts as a precipitate.

From figures given me by Mr. H. L. Smith, Superintendent of the Norfolk Water Works, and Mr. George W. Wright, the Chief Engineer, I have estimated the cost of the filter plant to be, namely: For the filter plant proper, $99,808.31, and for work upon the supplementary subsidence basin, including darinage pump and house, and pipe, etc., $4,690, making the total cost $104,498.31. Or the figures given in greater detail are as follows:

Filter building and foundations	$23,341.98
Filters and their auxiliaries..	74,083.33
Pump for supplying the filters	1,690.00
Electric light equipment, etc.	693.00
	$99,808.31
Work upon supplementary subsidence basin, including drainage pump, etc.....	4,690.00
	$104,498.31

From figures furnished by the Superintendent and Chief Engineer of the Water Works, the actual cost of operating the filter plant at Norfolk during the month of March, 1900, has been estimated to be $5.47 for 1,000,000 gallons

* A paper read before the Twentieth Annual Convention of the American Water Works Association at Richmond, Va., May 15-18, 1900. Condensed for "City Government."

of available filtered water. If the filter building had not been located adjacent to the pumping station, however, and new men had been required to take the place of some of the men employed in the pumping station who devote a portion of their time to the work of operating the filter plant, the cost would probably have been about $5.80, namely:

Labor	$1.13
Coal, $3 per ton, for supplying the water and washing the filters, etc	0.86
Cleaning supplementary subsidence basin	0.08
	$2.07
Sulphate of alumina, 1.95 grains per gallon, $1.20 per 100 pounds (including that required for washing)	3.40
	$5.47
Additional labor that would have been required if the pumping station was not located adjacent to the filter building	0.33
	$5.80

Interest and sinking fund have not been considered in the estimate, nor the cost of repairs as there was not any charge for the same.

The raw water at Norfolk is a very difficult water to purify. At times there are sudden changes in its color and character. It is always highly colored with vegetable matter from the vegetation upon the water rshed and in the storage lakes, and frequently it is very highly colored, and for a few days after heavy rains it is generally exceedingly turbid.

The water shed from which the water is derived is practically unpolluted, and the principal object in installing the filter plant was to remove the color and turbidity from the water.

This, the filter plant has accomplished in a most successful manner, as the filtered water is practically as colorless as distilled water and as clear and sparkling as the most desirable spring water.

On account of the normal number of bacteria in the raw water at Norfolk being relatively very small, a remarkably high percentage of bacterial removal is not always expected.

During the 30 days official test of the filter plant, from October 10th to November 8th, 1899, the average number of bacetria found in the raw water was 356 per c. c., and in the filtered water 12 per c. c., the corresponding bacterial removal being 96 per cent.

The highest number of bactera found in any one sample of raw water during the official test was 1,715 per c. c. and the corresponding bacterial removal was 98.13 per cent.

To give an idea of the number of bacteria sometimes contained in raw water, I will mention the number in the raw water at Lawrence, Mass., and at Albany, N. Y.: The average number at Lawrence from May 7 to October 29, 1898, was 5,150 per c. c., and the average number at Albany from September 9th to December 30th, 1899, as determined by weekly averages, was 20,829 per c. c

The average quantity of sulphate of alumina used during the official test at Norfolk was 2.5 grains per gallon of water filtered.

A test of one week which has recently been made wth the Norfolk filter plant, when the same quantity of sulphate of Alumina, per gallon, was used, and when the average number of bacteria in the raw water was 3,404, has shown a bacterial removal of 99.51 per cent. During this latter test the average number of bacteria in the filtered water was 14 per c. c.

The average color of the raw water during the official test at Norfolk, by the platinum cobalt standard, was 99, and the average removal of color was 93.6 per cent. The average removal of albuminoid ammonia during the official test (as determined by two analyses), was 94 per cent.

PUBLIC WATER SUPPLIES FROM DRIVEN WELLS.

PART IV.—SOME DETAILS OF CONSTRUCTION — PUMPING FROM DRIVEN WELLS—DESCRIPTION OF SEVERAL PLANTS.

By E. Kuichling, C. E.

SOME DETAILS OF CONSTRUCTION.

Reference has already been made to the strainers used at the bottom of driven wells, and a few additional data relating to them may perhaps be of interest. In the 8-inch and 6-inch wells at Memphis, Tenn., the brass strainers were one-half inch less in diameter than the iron casing pipe, and consisted of a number of sections screwed together with flush joints to form lengths of 50 feet. The perforations were slits 0.01 inch wide and 2 inches long arranged spirally around the tube at intervals of 0.2 inch, and the bottom was closed with a brass plug. They were set in place after the casing had been driven to the full depth, whereupon the casing was pulled up as much as the length of the strainers, and the annular space at the top of the latter was then tightly packed to exclude the fine sandy subsoil. In the wells of the plant at Natchez, Miss., which reached a stratum of very coarse sand 40 feet thick at a depth of 260 feet, the casings were sunk open-ended with a water jet, and strainers 30 feet long were then placed in the bottom as at Memphis, the casings being pulled up the same distance. For the 6, 8 and 10-inch wells of the Camden, N. J., plant, strainers about 24 feet long were used; for the 6-inch and 8-inch wells at the Jameco and Watts Pond stations of the Brooklyn Water Works the strainers were all 10 feet long, and for the 7-inch wells of the Leipsic plant they were 16 feet long.

In the contract for the wells of the Galveston, Tex., water works, Mr. Wynkoop Kiersted, C. E., specified the use of lap-welded iron drive pipe, from 6 to 15 inches diameter, with minimum weights ranging from 25 to 72 pounds per foot according to size; the strainers to be of perforated brass tubing not less than one-eighth inch thick, and otherwise of ample stiffness; the perforations to be graded in size with respect to the coarseness of the sand found in the subsoil, so as to exclude the sand while freely permitting the inflow of the water; the aggregate area of the perforations to be at least ten times the sectional area of the brass tube, and the length of the strainers to be such as shall be best suited to the depth of the sand stratum; the bottom to be closed tightly with a brass plug, and each strainer to be attached to the casing by a water-tight joint; all materials and workmanship to be guaranteed for a period of six months after its completion, and the wells to be flowing freely with no evidence of sand accumulating therein as a direct result of imperfect joints and an imperfect plugging of the bottom of the strainer. It will be noticed that while these general conditions impose due responsibility upon the contractor, they also leave proper latitude for the exercise of the engineer's judgment during the progress of the work, as it is often impossible to determine all of the incidental details until the deep wells have been actually sunk and tested.

Somewhat more definite provisions are contained in the specifications recently prepared by Mr. Freeman C. Coffin, C. E., for the new driven well plant at Wellesley, Mass. It was here stipulated that the wells should be formed of 2.5-inch lap-welded wrought-iron pipe, either of standard weight or extra heavy according to circumstances, furnished in lengths of about 5 feet with tapering screw-threads cut on each end, and a properly threaded heavy wrought-iron socket or coupling 3.5 inches long to each length, so as to allow the ends of the pipe to be screwed up close to each other in the middle of the coupling, while making an air-tight fit in the threads and preserving a straight alignment. The well-points or strainers to be formed of extra heavy 2.5-inch wrought-iron pipe, approximately 5 feet long, with a similar screw-thread at one end as on the drive pipe, and perforated with 48 tapped holes at uniform distance apart; each hole to be bushed with a short piece of thick brass tubing of one-fourth inch bore, threaded on the outside and screwed into the said tapped hole so as to project about one-sixteenth of an inch on each side, which projections shall then be neatly headed down. The open-ended strainers to be coupled to the drive pipe and sunk by the washing-out process with water pressure by skilled workmen to such depth, not less than 33 feet, as will give the most satisfactory flow of water. Whenever required, a diaphragm pump shall be attached to the top of any well and a test made of its capacity. Any well ordered driven will, if abandoned, be paid for at the regular rate, but the contractor will be required to remove the pipe at his own expense. After each well has been driven to its proper depth, it shall be pumped at its full capacity until no sand or gravel rises with the water.

For the 6-inch wells of one of the plants at Lowell, Mass., strainers from 8 to 17 feet long were used, and in the same plant two 6-inch wells, with strainers respectively 24 and 42 feet in length, were also driven horizontally for a considerable distance into a thin water-bearing stratum not very far below the surface. The latter operation was effected in an open trench excavated to the required depth and a little longer than the separate lengths of tubing. A strong timber wall or bulkhead placed across the trench near one end afforded a bearing for four powerful jackscrews, and a collar securely clamped to the horizontal pipe furnished the opposite bearing, so that by working the screws simultaneously the pipe was pushed or forced into the soil for a distance equal to the length of the screws. By repeatedly withdrawing the latter and readjusting the collar on the pipe, the driving was continued as far as deemed expedient. This process was, however, slow and expensive, and although it had been used with good results in other places, the additional yield of water did not compensate for the increased cost over an equivalent number of vertical wells at Lowell.

The vertical 6-inch tubes of the Lowell plant were all sunk open-ended to the required depth in order to determine the character and thickness of the water-bearing stratum, whereupon they were cleaned out and filled with water to hold back the sand. A strainer of the proper length was then inserted in each pipe and held in position temporarily by wooden rods bearing against the driving derrick, after which the pipe was pulled up far enough to bring its lower end a little below the lead ring at the top of the strainer; the small annular space between the pipe and the said ring was then closed by expanding the latter with suitable tools. The strainers having thus been fixed, the wells were thoroughly pumped, washed and steamed, and thereafter the water remained clear and free from sand.

An ingenious precaution against the entrance of very fine sand into a tubular well is described by Mr. Robert Sutcliff in a paper read before the British Society of Engineers in 1877. Such a well had been driven into a bed of extremely fine sand at Chiselhurst, and it was impossible to obtain clear water therefrom even with the finest available strainer. The pipe was accordingly pulled up, the strainer removed, and the open-ended tube re-driven into the same hole. A powerful pump was then attached to the top and operated vigorously until 4 or 5 barrow loads of sand had been pumped out, thereby forming a cavity at the bottom, after which the pump was disconnected and a quantity of clean, sharp gravel was dropped down the pipe and rammed as well as possible, thus forming a small gravelly filter bed at the bottom. The pipe was probably also pulled up gradually while the gravel was being put in place, so as to allow the latter to spread out laterally, after which it was withdrawn entirely, the strainer replaced on the end, and finally driven back into place in the artificial gravel bed. A device called a "sand tube," consisting of two concentric perforated tubes having the annular space between them completely filled with a wrapping of finely-woven horsehair cloth, was then dropped into the well, and upon again attaching the pump the water came freely and was soon permanently clear.

Mr. Sutcliff also cites a similar well at Orpington, where the water-bearing stratum

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of fine sand flowed or ran to such extent that a cavity could not be formed in it by pumping, as in the preceding case. A 6-inch tube was therefore driven for several feet into the quicksand, the material being removed from the interior with an ordinary boring shell, whereupon fine gravel was rammed down and the pipe gradually pulled up as the work advanced until the top of the quicksand was reached. The remainder of the casing was left in place, and into the vertical gravel bed so formed a 1.25-inch pipe was driven from which a yield of 240 gallons of good water per hour was obtained.

In general, the yield of a well depends on the freedom with which the water can gain access to it, and in some degree also on its diameter; hence when water of good quality and quantity is found in several different earthy strata in the same locality, all of them may be tapped advantageously in each well by simply inserting sections of perforated pipe at the proper places in the lines of casing as they are being driven. Where this is done, it is obvious that a reasonably accurate knowledge of the location and thickness of the water-bearing strata has first been obtained from preliminary tests. By thus tapping more than one stratum, we may be able not only to increase the yield materially, but also to considerably diminish the velocity of flow into the wells, and so to reduce proportionately the tendency of the current to carry along fine sand or silt. It may happen, however, that even with a relatively small velocity of approach, more or less fine material will gather in a well, and if clear water is then desired, the diameter of the pipe must either be large enough to make the upward flow, at the given rate of delivery, somewhat less than is sufficient to hold such material in suspension, or the water must be discharged into a sedimenting basin. It also follows that when the accumulation of sand or silt in the strainer becomes so great as to reduce the yield, the well must be cleaned either mechanically or by excessive pumping.

As previously stated, wells in earthy strata are usually cased to their full depth, and to avoid the trouble of making watertight slip joints at the junctions of casings of different diameter, pipes of uniform size are used whenever practicable. Furthermore, the casing should not be driven too near the underlying rock or other impervious stratum, as it is desirable to leave some clearance between the latter and the bottom of the strainer, especially if the water-bearing material is coarse enough to permit the use of an open-ended pipe. Accordingly, if such a tube has accidentally been sunk too deep, it must be pulled up sufficiently to give the water an easy entrance at the bottom. On the other hand, if it becomes necessary to close the bottom of an open-ended strainer on account of the inflow of fine sand, etc., a wooden plug can readily be wedged in place with suitable tools; and in cases where such plugging is contemplated in the outset, the operation is greatly facilitated by making the inner diameter of the steel shoe or cylindrical cutting edge somewhat smaller than that of the casing and strainer.

A pipe of large diameter is usually pulled up by repeatedly clamping to its top a strong ring with two or more projecting arms, under which jackscrews bearing on a heavy timber foundation are placed and worked in unison. If the sinking is done by the hydraulic process, the upward flow of water on the outside of the pipe renders the withdrawal very easy, but soon after the stoppage of the force pump, the earthy material generally packs tightly against the tube and creates so much friction that great lifting power must be applied. Under such conditions, carelessness frequently results in tearing a long pipe apart at the couplings, where the thickness of the metal is greatly reduced by the screw-threads. Small pipes of moderate length are easily withdrawn by means of a long lever with a stout forked end bearing against a clamp ring at the top; and if the resistance is not excessive, this ring can be made self-releasing when pushed down while an upward motion causes it to grip the pipe firmly, thereby allowing the work to proceed as rapidly as the lever can be moved up and down.

If a well has been sunk so deep as to tap a stratum which yields water of bad quality, or one which proves to be unduly absorptive, while the water obtained from some higher stratum is satisfactory, the lower portion of the boring must be plugged in a permanent manner. In earthy subsoils and with open-ended tubes, this can often be accomplished by dropping balls of plastic clay down the pipe and then forcing them out from the bottom into the surrounding material by suitable ramming tools, at the same time pulling the pipe up gradually until the higher water-bearing stratum is reached. In rocky formations, a long bag of dry seeds with a sinker at the bottom is usually lowered with a detachable rope to the required depth, and held in position until the swelling of the seeds expands the bag sufficiently to make a tight stopper, after which the rope is removed and cement or clay is deposited over it to any desired depth. Various other devices to accomplish the purpose have also been used, but a description thereof may here be omitted.

Owing to the uncertain distribution of the flow in water-bearing rocks, it is always expedient to drill into them for a considerable distance in order that as large a surface and as many seams and crevices as practicable may be exposed. If the yield of such a well is inadequate, it may sometimes be increased by exploding a torpedo at the bottom or at different points in the wet strata, whereby the rock is more or less shattered and new fissures are opened through which the water can flow with greater freedom than before. The fragments of rock loosened by the explosion are then broken into small pieces by the drill and removed by the sand-pump as far as possible, thus forming a cavity at the bottom. Another method of increasing the yield is to enlarge the diameter of the entire well, which is generally much more expensive than the use of torpedoes. The former process is therefore preferred, as it has the advantage of involving a smaller original outlay in case the well must ultimately be abandoned.

In an excellent monograph on Artesian Wells in the Fifth Annual Report of the U. S. Geological Survey, 1883-84, Prof. Thos. C. Chamberlain says that "from the character of the flow obtained by the first ordinary boring, it is possible to anticipate the probable result of enlarging the well. If the water issues with great force, it is manifest that the larger bore will greatly increase the delivery, because in addition to the increased size the friction is relatively less. If the flow be gentle and the head is known to be high, it is clear that the conveying stratum must interpose obstacles, and the indications are unfavorable to a very great increase from the enlarged well. If the fountain-head is low, a full and gentle flow is the natural sign of a generous stream which might give an almost equally flush discharge from the enlarged bore." It may also be added that while the foregoing remarks were written with special regard to drilled wells in rock formations, they are likewise applicable with little modification to driven wells in earthy deposits.

The foregoing considerations also assist materially in choosing between one large well and several small ones, since if a large quantity of water is known or presumed to be permanently available in an approximately homogeneous and thick stratum, the cost of sinking a single well of large diameter will generally be less than that of an equivalent number of smaller ones; but if the character of the water-bearing stratum and the volume of flow therein are unknown or uncertain, it will doubtless be preferable to sink a number of relatively small ones sufficiently far apart to draw from an extensive area. If the water is found in rock, the series of small wells can also be torpedoed, thereby rendering draught possible from a much larger volume of the stratum than with only one well of practicable size. The essential consideration in this case is not so much the providing of means for the water to rise to the surface, as to assist the water-bearing stratum in delivering it to the base of the wells; and it is evident that the porous rock about the base of a single large well cannot furnish as much inflow as the volume of rock about the base of several small wells. The same argument also holds true for driven wells in a sandy subsoil.

Another important element in the choice of size is the relative difficulty and expense of making large or small borings, or driving tubes of large or small diameter, with the appliances and material at hand. Thus at Fremont, Neb., Mr. C. H. Godfrey deemed it more economical to obtain a water supply for the municipality by driving fifty 2-inch wells to a depth of 79 feet in a gravelly subsoil in five compact clusters of ten tubes each, than to use a smaller number of larger pipes. The 2-inch tubes of each cluster were here driven separately, and so close together that their tops could be coupled into the base of an air-tight iron hood 18 inches in diameter, which was fitted with a 6-inch suction pipe leading to the building that contained the air-separator and pumping machinery. The clusters themselves were about 50 feet apart, one being located at each corner of a rectangle about 100 feet long by 50 feet wide, while the fifth cluster and the separator were placed midway in the two long sides. The original yield of this plant is said to have been 2,400,000 gallons per day.*

It may also be remarked in this connection that where a well with a short or inadequate strainer is driven to moderate depth into a thick stratum of water-bearing sand or gravel, its maximum yield cannot be appreciably increased by sinking it deeper, as neither the head under which the water enters nor the discharging capacity of the pipe is thereby materially changed. The only benefit derived from such extra depth is the additional subsoil storage volume or reserve supply in dry seasons when the water-table of the stratum falls. By lengthening the strainer, however, the yield will continue to grow until the proper relation between the aggregate area of the strainer openings and the sectional area of the pipe is established, after which nothing will be gained by deepening the well. An increase of yield can then be obtained only by using a larger pipe with an appropriate strainer. Furthermore, it has often occurred that a well which gave a large yield of good water from a bed of sand, exhibited a much smaller flow after it had been carried down into the underlying rock. The sinking of wells to unnecessarily great depths can therefore be regarded only as a useless expenditure of capital, except for exploratory purposes.

If the plant is to consist of a number of wells, they should always be located in a line approximately at right angles to the direction of flow in the water-bearing stratum, or better yet, in a curved line convex to such direction, in order to collect the water from the widest possible area. By the latter arrangement, the greater hydraulic pressures which necessarily prevail in the stratum at the ends of said line, in consequence of the removal of considerable water by the intermediate wells, will produce a gradual convergence of the lines of underground flow from a much greater width than the length of the curved line, and thus increase the efficiency of the plant proportionally. The disposal of wells in pairs or clusters along such a line, is essentially a question of proper diameter and advantageous future operation, but the general principle above set forth has been observed in all successful modern plants, as is evident from the general descriptions already given.

PUMPING FROM DRIVEN WELLS.

In localities where the pressure of the subsoil water is not sufficient to carry it considerably above the surface of the ground, pumps must be applied to render it available for convenient use. The machinery for this purpose may be grouped into two general classes, the first embracing the devices employed when the natural water-table is far below the surface and bulky apparatus cannot be placed in close proximity thereto without undue expense; while the second is represented by the ordinary modern pumping engine, in the water-cylinders of which a partial vacuum is created mechanically, and which must therefore be located within a corresponding height above the lowest prospective level of the ground-water at or in the wells. The scope of this treatise, however, precludes any extensive description of either class of appliances, and it can only be remarked here that their relative efficiency varies within wide limits; also that for large plants, the second class of machinery is usually much more efficient than the first; and lastly, that in view of the desirability of concentrating and simplifying the machinery for such plants as much as possible, the advantage is decidedly in favor of the second class. In selecting a site for a series of driven wells, the preference is therefore commonly given to the one where the subsoil water comes nearest to the surface.

From the preceding discussions, it was learned that the general surface of the ground water at the site might be depressed considerably, both by seasonal variations of rainfall and by long-continued pumping; furthermore, that a conical depression of more or less depth was formed in this surface at each well by the establishment of a hydraulic slope in the subsoil corresponding to the rate of inflow or discharge; and it is also obvious that a certain amount of head or pressure is required to overcome the various frictional resistances to the flow through the suction pipes and pump valves. For the first-named depression, it is usually prudent to allow from 5 to 10 feet in a sandy stratum of moderate extent, unless a close study of the conditions and probabilities points to some larger figure, and for the second, many American and foreign engineers have adopted a permissible limit of 8 or 9 feet. The suction lift of the best pumping engines, however, rarely exceeds 22 feet in ordinary operation, and as most of this head is consumed by the two depressions just mentioned, it follows

* "Engineering News," Nov. 7, 1891. Vol. 26, p. 442.

that little head is available for overcoming suction valve resistances and pipe friction. The suction pipes and passages should therefore be proportioned generously in order to reduce the friction to a minimum, and they should be placed along with the pumps very near or even below the natural water-table.

When the plant consists of a large number of tubular wells, the pumping station is usually located midway in the line along which the wells are driven, and the suction main is laid in both directions therefrom on a continuously descending grade to the extremities, in order to facilitate the removal of air or gas and prevent its accumulation at intermediate summits. This plan has the advantage of dividing the wells into two or more groups, so that in case of accident to one portion of the main a partial supply of water can be obtained from the others; and it also avoids the use of an undue amount of large and expensive pipe, besides allowing the air-pumps to be placed in the same building as the water-pumps. The diameter of the main is commonly fixed by considering that the greatest velocity of the water therein shall not exceed 1.5 to 2.0 feet per second, which is from one-half to two-thirds of the maximum velocity ordinarily permitted in the discharge pipe of the pump. From the suction main, branch pipes of more or less length are carried laterally on a similar descending grade to the wells on one or both sides, and are either coupled directly to the casings or are extended down inside the latter to a point a little below the extreme limit of suction, such point being about 34 feet below the level of the pump cylinder. Each lateral pipe is provided with a stop-valve, and if more than one well is connected thereto, additional valves are used so that any branch or any well can easily be shut off. By adopting this arrangement, the diameter of the suction main gradually reduces from the pumping station in both directions, and the well tubes become either integral portions of the suction pipe system or simply the walls of a series of open wells of small bore. In the choice between these two modes of connecting the wells, the second is preferable on the score of tightness and facility of observation, while the first is the cheaper.

Another plan of construction is to let the several suction mains bend vertically downward at the central station and discharge into a large and deep open well or reservoir, instead of connecting directly with the pumps. The several pipe systems thus become siphons, each having a number of small ascending legs formed by the tubular wells, and the vacuum therein being maintained by means of an air-pump communicating with the highest points or summits of the mains. As the successful operation of either a pump or a siphon depends upon the exclusion of air from the suction system. It is according obvious that the greatest care must be taken to make all the pipes and joints of the entire system as air-tight as possible, otherwise the delivery of the wells will be materially reduced as the ground-water surface falls; and from the experience gained at many places this is far from being a simple matter. It is also evident that devices for separating air and sand from the water are required, and that various changes of size and direction of the pipe are unavoidable. Each of these elements, however, involves a certain resistance to the flow, or a loss of head, in addition to the pipe friction; and as it becomes expedient to reduce the aggregate of these losses in the suction system to a minimum, it follows that all such changes should be made as easy as practicable in connection with pipes of relatively large diameter. Provision must also be made in the design for the expansion and contraction of the iron pipe system due to changes of temperature, or else such variations of length must be prevented by fixing the pipes rigidly at a sufficient number of places, in which event disagreeable longitudinal stresses will be developed and transmitted to the intermediate joints. The proper construction of the suction pipe system is therefore a very difficult matter, and requires the utmost attention to many details, especially as experience has demonstrated that a long line of new pipe may be tight under moderate water pressure and yet leak considerably when tested with air.

In general, the larger portion of the air which causes trouble in pumping a driven well plant gains entrance to the suction system through imperfect joints in the main and branch pipes, the well tubes, and the stuffing boxes of the stop-valve stems; some may also enter through porous castings and defective welds, or along with the ground water; and if the wells are shallow, or less than about 30 feet deep, and the water-table has been unduly lowered for any reason, considerable quantities may likewise enter through the upper portions of the strainers or even through the bottom. It must also be remembered that in dry soil there is always a comparatively free circulation of air, so that no material reduction of such leakage can be effected by laying the pipes in dry trenches, or covering them with earth if laid directly on the surface. The entrance of some air is therefore to be anticipated, notwithstanding the exercise of all reasonable precautions, and hence provision should be made for its easy removal by laying the pipes as already indicated upon a secure foundation, with ascending grade from wells to pump, etc. Concerning the requisite depth of covering, little can be said except that the deeper the pipes are buried in the ground, the less will be the resulting variations in temperature, and that where such variations are large troublesome leaks are the usual concomitants. A proper observance of these principes, however, as well as a low position of the natural water surface, often leads to rather deep and wet excavations for placing the suction pipe system; and to overcome the consequent difficulties, the site of such excavations should first be thorough drained, either by strong pumping from a series of temporary shallow wells, or from the permanent deep ones, as the circumstances may indicate.

For small plants, the pipes of the suction system are usually made of the best wrought iron or steel tubing, the threads of all screw joints being cut with the utmost precision in order to secure tightness, and only a small quantity of finely ground red or white lead filler being applied to them. For large plants, the main pipes are commonly made of cast-iron, with either bell or flange joints, the latter being generally used in the connections of the small lateral pipes leading to the wells. The faces of all flanges must obviously be made perfectly true, and as a further precaution against leakage, a gasket of copper, lead or india rubber is inserted between them. In an exceptionally tight suction main, each flanged joint was made with a thin copper gasket placed between a pair of rubber ones. Joints are also made with rings of soft lead wound with lamp cotton, or covered with cloth soaked in tar. Various patented screw joints are likewise available; in one of these the screw threads of the sockets are thickly covered with lead; in another, soft lead is forced against the screw threads of the pipe by powerful compression from a set screw in the coupling; while in a third, the sockets of the cast-iron flanges or wrought-iron couplings are made somewhat longer and thicker than usual, so as to overlap an inch or more beyond the last screw thread on the ends of the pipe, and the diameter of the overlapping portion being made about one-fourth of an inch more than that of the exterior of the pipe, thus forming an annular space into which lead is poured and calked, as in the case of the ordinary bell joints. Special attention must also be given to the packing of the stems of all stop-valves.

The main suction pipes of a driven-well plant usually terminate in an "air-separator," which is a tight chamber of considerably larger diamter than the pipe, and in which the water is caused to move slowly and flow in a comparatively thin sheet over one or more wide partitions, thereby inducing any sand or grit to settle and the air to become liberated. At the top of the separator the air is finally removed by a pipe connected with an air pump, while the sediment on the bottom is occasionally discharged through suitable openings or a man-hole, after temporarily throwing the apparatus out of service. If the water carries much sand and the delivery of the wells cannot be interrupted, it is evident that the separators must be in duplicate, with independent connections to the mains and air-pump, each connection being fully controlled by tight stop-valves. Several different forms of separator are in use. In some of them the air-pump is automatically set in motion or stopped by the action of a float which, in falling or rising, opens or closes the throttle valve of the operating steam engine, or suitably regulates the speed of any other kind of motor; in another form, which consists essentially of a large chamber surmounted by a smaller one, the water-level is shown in a glass tube attached to the side of the small chamber, and the attendant adjusts the speed of the air-pump according to its position; and in a third form, the upper chamber is reduced to a pipe only a few inches in diameter, but rising to a height of about 35 feet above the highest level of the ground-water, from the closed top of which a smaller pipe runs to the air-pump which is kept in motion constantly. As water cannot rise higher than about 34 feet by the formation of a perfect vacuum in a vertical tube or chamber closed at the top, and as the ordinary means for exhausting the air in such a tube rarely produce a lift of over 28 feet, it will be seen that the last-named form of separator has the advantage of preventing any water or sand from ever reaching the delicate valves of the air-pump.

DESCRIPTION OF SEVERAL PLANTS.

The diversities of practice in respect to the suction system are perhaps best indicated by giving a brief description of several plants of different magnitude and general design. At Brooklyn, N. Y., there are a number of driven-well stations which afford an excellent opportunity of studying the development of this mode of water supply. The earliest are those at Spring Creek and Baisley's, each of which consists of 100 two-inch wells from 30 to 42 feet deep and uniformly 14 feet apart, arranged in two straight and parallel rows also 14 feet apart, with a 12-inch cast-iron flange-jointed suction main laid to a nearly level grade a little below the surface midway between said rows, and having 3-inch wrought-iron lateral pipes extending at right angles therefrom to the tops of the 2-inch well tubes. The separator or receiver is located in the middle of each line of main pipe and consists of a large, air-tight vertical cylinder 6 feet in diameter, connected near the bottom to the water pumps by two lines of 16-inch pipe, and at the top to an air-pump. Every lateral pipe is provided with a 3-inch stop-valve, and is tightly joined to its appropriate well and the suction main. These two plants were built in 1883 and 1884. The next ones were located at Jamaco, Forest Stream and Clear Stream, and consist respectively of 183, 110, 130 and 150 two-inch wells from 27 to 73 feet deep, arranged in the first-named plant at uniform intervals of 13 feet in three straight and parallel rows 17 feet and 36.5 feet apart, and in the others at uniform intervals of 16 feet in two similar rows 18 feet apart. The suction main of each plant is formed of 15-inch cast-iron flange-jointed pipe, with 3-inch lateral pipes and a centrally located separator, all as aforesaid except that the pump connections are here 20 inches in diameter and were placed at a somewhat lower level. The increase in the spacing of the wells and the size of the main, as well as the lowering of the pumps and the use of improved connections, are noteworthy in the latter plants.

In 1894 and the following years, numerous temporary and permanent additional wells were sunk at other points in the vicinity of Brooklyn in order to increase the city's water supply. The preference was then given to wells of greater depth and larger size than formerly, with long strainers and drop-suction pipes, and spaced farther apart. Thus at Spring Creek 13 6-inch wells were driven at intervals of about 50 feet in two irregular rows about 70 feet apart to depths of from 42 to 75 feet, brass strainers averaging 7 feet long being used. The pumping station was located near the middle of the series, and two lines of 14-inch main suction pipe about 100 feet long extended therefrom to the line of 12-inch pipe which was laid between the two rows. The lateral and drop-suction pipes in the 6-inch wells were all 4.5 inches in diameter. At the Watt's Pond station there are 12 6 inch wells from 48 to 53 feet deep, with strainers 10 feet long, having perforations aggregating 24.6 square inches per lineal foot, and covered with brass wire-cloth whose meshes have a net area of 32.7 square inches per lineal foot of strainer pipe. The wells are driven at regular intervals of 76 feet staggered in two straight rows 24 feet apart, each having a 4.5-inch drop-suction and 5-inch horizontal lateral pipe connected with the main suction line, which is made of flanged cast-iron pipe ranging from 10 to 16 inches in diameter. The plant of the Merrick station embraces 62 four and one-half inch wells spaced at regular intervals of 75 feet, staggered in two straight rows 24 feet apart, with an average depth of 45 feet and strainers 6 feet long, each having a sand pocket 2 feet deep and a 6-inch driving point; also 2,340 feet of cast-iron flanged suction pipe, composed of about equal quantities of 18, 16, 14, 12, 10 and 8-inch pipe, laid midway between said rows with a gradual fall of 12-inches from the middle to each end, and connecting with the receivers and pumps by two short lines of 24-inch pipe; also two simple receivers only 3 feet in diameter. The wells have 3-inch drop-suctions 28 feet long and 3.5 inch horizontal branches to the main pipe, each branch being controlled by a stop-valve.*

At Lowell, Mass., three separate plants were constructed at different times between 1891 and 1897. After much preliminary experimental work with pipes of different

* "The Brooklyn Water Works." By I. M. DeVarona, C. E., 1896.

sizes and sunk by different processes, the first plant was finally completed in 1892 with 50 six-inch and 22 four-inch wells, ranging from 47 to 67 feet in depth, and averaging 52 feet. These wells were spaced irregularly from 50 to 100 feet apart in several irregular rows, according to the character of the subsoil, which varied so greatly that the previously made plan could not be followed. The tops of the wrought iron tubes were connected directly to horizontal branches from the main and lateral pipes, and the entire suction system, which had an aggregate length of 5,806 feet, was laid with flanged joints on the properly graded surface of the ground. The pumping station is located at a central point in the system, and near it is placed the separator, which is a tight chamber made of boiler iron. In plan the latter is circular with a dome-shaped top. Its height in the middle is about 4 feet, and it contained originally three partitions arranged so as to cause the water coming from the wells to pass over the first, under the second and over the third, before reaching the effluent pipe leading to the pumps; the middle partition was, however, afterwards removed with good results. As might have been expected from the large number of joints in the suction pipe system, there was at first much trouble from the leakage of air into the pipes, and an air pump of large size was ultimately procured and connected with the top of the separator; the defective joints and pipes were also carefully repaired, but in spite of all efforts to keep the system tight, considerable leakage still occurs at times, so that it is expedient to send a man over the various pipe lines every morning with a pail of asphalt paint to stop all leaks that he may discover.†

(To Be Continued.)

†"Paper by Geo. Bowers, C. E., in Jour. N. E. Water Works Assoc., Dec., 1894. Vol. 9, pp. 67-76.

Water Metres in Schools.

The Scranton Gas and Water Company has notified Secretary Fellows, of the School Board, that on and after July 1 water meters will be placed in all of the schools in North Scranton. The company stated that this step was taken on account of the great waste of water in those buildings.

The company some years ago placed meters in all buildings where steam heat is used, but this is the first instance in which they have been placed in other buildings. It is believed that before school opens in the fall they will have been installed in all the buildings in the city.

Artesian Water Supply for Winnipeg.

An interesting experiment is about to be tried in Winnipeg, Manitoba. Winnipeg is a progressive Canadian city of 50,000 inhabitants, which only took over the waterworks system from a company a year ago. As the Assiniboine river is a poor source of supply, an artesian well has been sunk to a depth of 45 feet and the city is now putting in a Worthington pump and expects to be able to supply 3,000,000 gallons a day from this one artesian well. Mr. Manserg, the celebrated English waterworks engineer, pronounced against an artesian supply for cities, but Mr. Rodolph Hering, of New York, who is also a celebrated waterworks engineer, made a special examination in Winnipeg and pronounced in favor of such a supply. As no scientific gentleman is able to define the exact source of the artesian water some doubt is expressed in Winnipeg as to whether the supply will hold out once it is regularly tapped to the extent of 2,000,000 or 3,000,000 gallons a day.

Streets and Lighting.

NUMBERING CITY LOTS.

A SYSTEMATIC WAY OF ENTERING CITY LOTS AND PARCELS ON THE TAX DUPLICATE.

By A. L. Westgard, C. E., Warren, O.

Section 2,615 of the Revised Statutes of the State of Ohio provides that "where the lots of any municipal corporation are not numbered consecutively upon the original plat thereof and the plats of additions thereto, or subdivisions thereof, it shall be lawful for the Auditor and Recorder of the county in which such municipal corporatoin may be situate, in conjunction with some person to be appointed by the Mayor of such municipal corporation, to make a revision of the numbers of all the "in-lots" and "out-lots" of such municipal corporation, as the same stand upon record, and to number anew all the lots, so that the "in-lots" shall have but one consecutive series of numbers, beginning with number one; and the "out-lots" shall have but one similar series of numbers, also beignning with number one."

This system is to the tax duplicate the same as an invoice of stock is to the merchant. Where this system is not used duplicate description of realty is generally so vague and faulty where unplatted lands are concerned, that a tax title on such a parcel of land is generally absolutely worthless on account of faulty description, while in a city where every parcel of land has its own specific number and is carried under such number on the tax duplicate the description of such parcel in a tax deed copied directly from the tax duplicate is a good and pertinent description, and can only apply to this particular parcel or lot, as no other parcel or lot within the corporate limits has the same number. The all-important factor in any government is for each citizen to carry his share of the expense of running such government. Now if every citizen knows that a tax title on his property in course of time will become a good and valid title, he will pay his taxes, and pay them promptly, while, where he is aware of the fact that a tax title is more or less of a joke, he will take his own time in paying his taxes, if he feels inclined to pay them at all.

The proposed system is simple and effective. The law provides that the numbering committee shall begin with the original town plat and with number one of such plat and call it number one of the consecutive system. After numbering all the parcels in the original town plat, pass on to the next plat; that is, the one that was filed for record first after the original plat, and so on through all the additions to the town plat, according to priority of file-mark. Then, after all the platted lands are numbered consecutively, take up the small parcels of land in the town or city—not included in plats of record—and continue numbering until every lot has its number.

Beginning with the large parcels, or such parcels as are liable to be divided into small lots, and calling such large parcels "out-lots," commence with "out-lot" number one, (O. L. 1), and continue till each tract has its number.

A map showing these new numbers must be recorded to make the new numbers valid, legal descriptions for all purposes; for transferring title as well as for tax purposes.

Section 2,616 provides that the Auditor and Recorder shall prepare a schedule, or record, wherein in one column shall be kept the old number of duplicate description of each parcel, and in another column the corresponding new number, so that in this manner the old description of the newly numbered lots will be kept a matter of record.

Section 2,619 provides that "after the revision of numbers is made and recorded every person who lays off lots as an addition to such municipal corporation, or who makes a subdivision of lots therein, shall number the lots so divided upon his plat in regular consecutive numbers, commencing with the next number after the highest number of such "in-lots" or "out-lots," as the same shall be ascertained by the recorder from a careful examination of the original records and revisions."

This system has numerous commendable points. It enables the County Auditor and Tax Assessor to easily keep track of every lot in the city, and I have made revision of numbers of lots in one Ohio city whereby about 100 acres of ground were added to the tax duplicate within the corporate limits. In every case where I have made such revision it has added something to the tax duplicate, and it has always worked admirably and given the county officials great satisfaction.

Concrete Unnecessary for Alleys.

A contemporary in Leavenworth, Kan., says that a citizen of that city is somewhat exercised about the needless expense of laying alley pavemnets on a concrete foundation. The citizen delivers himself as follows:

"This work of paving the alleys is costing the property owners the sum of $1.50 per square yard. It could be done just as well for all practical purposes, for $1 a yard, or even much less. The specifications for the work call for the pavement in the alleys to be placed on a foundation of concrete and the pavement to be laid with cement grouting. Both the concrete foundation and the cement grouting are unnecessary and that much added cost to be paid by the taxpayers.

"I am of the opinion that just as good a pavement for the alleys could be made by laying one course of brick on a sand foundation. The alleys are used very little for traffic. There are not fifty heavily loaded wagons pass through these alleys once a month. On the most of them there is in fact so little traffic that weeds grow in them during the summer.

"What is the main object in paving the alleys?

"It is to keep them clean more than any other purpose. The paving of the alleys is a good thing and the sanitary condition of the city is improved by it. It keeps them from becoming sink holes every time it rains and they can be flushed and kept clean when they are paved.

"A single course of brick, however, will accomplish this and the cost of such paving would be little more than half what it costs to pave them as the city is now contracting to do the work. Why, in Atchison they claim that one course of brick on a layer of sand is sufficient for a street where there is considerable traffic and they have several streets in that city which have been successfully paved with only one course. The cost of this sort of pavement in Atchison is less than 80 cents a yard. Considerable difference between 80 cents a yard and $1.50, is there not?"

The Pavement Controversy in Buffalo.

For several years the city of Buffalo has enjoyed the enviable reputation of being the best paved city in the United States, among those of the second class. This reputation has been somewhat shattered by the recent revelations as to the wretched condition of a large number of paved streets. The fault, however, is not in the pavement, but in that part of the city government which grants an appropriation for needed repairs. Pavements will not last forever and these in question have been down from 12 to 46 years.

"City Government" desired the facts in the case and has secured the opinion of an expert engineer, who is thoroughly conversant with the subject. He reports as follows:

"As to the cause of the paving controversy being carried on in Buffalo, I believe it is primarily due to our method of paying for the work. Here the entire cost of paving and repaving is assessed against the abutting property. Naturally the property owners object to paying for a second time, using the argument that the general public has the use of the street. Acording to our Charter, when more than one-third of the area of a street requires repairs, it is condemned and must be repaved. From time to time durnig the past three years the Board of Public Works has been reporting streets to the Common Council as being beyond repairs, but the latter body simply filed these communications away without taking any action. Last spring the Board again sent a list of all streets in the city which should be repaved. This list comprised 81 streets and parts of streets, 41 of which were stone and 40 asphalt. The stone streets have been laid from 19 to 46 years, and the asphalt, with two exceptions, from 12 to 18 years.

"All pavements laid previous to 1892 had neither a binder course nor drain tile. Some of the streets were even without sewers. Then again considerable progress has been made in making the mixture. All our streets were laid with a natural cement. However, the foundations, as a rule, are in good condition, although Portland cement would, of course, have made a more substantial job. These are some of the reasons why the streets have gone to pieces.

"No one has claimed for asphalt that it is the most durable pavement that can be laid. There has been some criticism about the method of repairing, but it is wholly unwarranted. The patches are guaranteed for three years, and in order to determine those under guarantee, each patch is located and plotted to scale—the work done in different years being shown in different color.

"There are 216.913 miles of asphalt, or 4,009,137 yards, costing $11,545,826.54.

"The following table shows the repairs made in various years:

REPAIRS OF ASPHALT.

	1895	1896	1897	1898	1899
Yards maintained	1,019,905	1,364,696	1,742,527	2,062,923	2,629,651
Yards repaired	57,068	62,768	78,551	75,956	66,721
Per cent. of yardage repaired	5 1-2	4 1-2	4 2-5	3 2-3	2 1-2
Amount expended	$69,661.49	$60,852.53	$82,153.76	$62,789.03	$81,456.47
Cost Sq. Yd. on total yardage	$0.067	$0.0439	$0.0480	$0.0288	$0.308

"From the above it is seen that in 1899 the percentage of yardage repaired was 2 1-2 per cent. as against 5 1-2 per cent. in 1895.

"The reason for this is, because sufficient money was not appropriated for repairs."

Sprinkling Highways.

By Supervisor John Roll, Santa Clara County, California.

It must be borne in mind that before a road can be profitably sprinkled it must be put in good condition. The road must be properly graded and made level and smooth. Otherwise the water will accumulate and stand in the depressions, soaking the foundation and making it soft so that the passage of the water wagons and other heavy vehicles will tear it up and scoop it out into ruts that will cost more to repair than the expense of properly constructing the roadbed in the first instance. But with the roadbed properly prepared to receive the water the subsequent expense for maintenance is but a trifle compared to the cost of repairing non-sprinkled roads.

The cost of our road sprinkling operations for the year 1899 was as follows:

Paid for water	$ 7,158 90
Paid for sprinkling	21,008 34
Paid for water works	23,632 20
Total	$51,799 45
Cost per mile for the year, including water works	$ 147 70
Cost per mile for the year, excluding water works	80 40

The tanks on the water wagons have a capacity of 800 gallons, and this will sprinkle a quarter of a mile of road. Where supply tanks or stand pipes are conveniently located one wagon will distribute on an average about thirty loads per day.

Two years ago we experimented with night sprinkling, and for the entire season watered our roads at night instead of in the day time. We found that the evaporation of water applied in the night was about 25 per cent. less than that applied in the daytime. This was a great advantage, but there were great disadvantages which seemed to offset it, and the night sprinkling was discontinued. Some of the disadvantages were that the cost was greater, there was difficulty in getting men who would work at night with the same efficiency as in the daytime, and the impossibility of distributing the water as evenly in the night as in the daylight. A protest also came from the people living in the towns, and who were accustomed to ride in the evening after the close of business. Their objection was that the roads being freshly sprinkled, it was uncomfortable to drive in buggies or carriages, or to ride on bicycles. The objections from these sources were so numerous and persistent that night sprinkling was abandoned after one season's trial.—"California Municipalities."

Cost of Sprinkling Streets.

Superintendent McAndrew, of Hamilton, Ontario, Canada, gives some interesting information about the expense of sprinkling the streets of his city. He does the work so thoroughly and satisfactorily that, strange to say, for a month he has not had a complaint.

"It requires," he says, "859 carts of water daily to sprinkle the streets, exclusive of what is used by the electric sprinkler. Each cart is built to contain 500 gallons, but only about 475 gallons are put in each tank, making a total of 408,025 gallons used daily. As the number of days each year that the streets need sprinkling approximate 125, there is used the large amount of 51,003,125 gallons of water. This is distributed by 29 carts, in daily operation, and the city has several carts in reserve for accidents. The electric car sprinkler uses daily 47 tanks, and as the tank measures 2,500 gallons, a total of 117,500 gallons is sprinkled daily, or 14,687,500 gallons in the 125 days. The total amount of water that will be used this year for street sprinkling by horse carts and the electric car sprinklers is approximated at 65,690,625 gallons.

"The 29 carts sprinkle about 700 blocks, or 40 miles of streets. This is done at least twice a day, and some of the business streets are sprinkled three and four times. It would be safe to say that each driver of a cart has to care for two miles of streets twice a day, beside the ground he has to cover going to his route and returnig to the yard. Each mile of street sprinkled by carts averages 5,100 gallons of water, while that sprinkled by the electric car is 2,500 gallons. Of course the work by the carts is the better of the two. The carts sprinkle from curb to curb, and the horses never travel faster than a walk, while the electric car on a majority of the streets cannot reach the curb by 6 to 12 feet, and its speed—well, it is called the 'Flying Dutchman.'"

Cleveland Citizens Keep Streets Clean.

The Cleveland "Plain Dealer" says that the "citizens who have been engaged in seeing to it that the streets on which they live are kept clean, will continue to do the work, and, it is likely, the idea will become more general than heretofore. The board of control adopted a resolution that if the citizens on any street desired to have the cleaning done under their own supervision the city would turn over to them the amount of money allotted to that particular thoroughfare out of the street fund. The citizens who have heretofore been paying the entire expense of keeping their streets clean, will have the burden lightened somewhat by the action of the city.

"On a number of streets in the city recently the residents have been paying men to keep the streets clean, the city having failed to do the work satisfactorily.

"Other than to view the efforts of the residents with satisfaction the city has done no work on the streets in question, nor has it spent any money where the work was being done at the expense of the citizens. The plan adopted in nearly every instance has been the "white wings" system and has proved a deal more satisfactory than the street sweepers operated by the men who secured the contract from the city. The city has not sufficient money to operate the "white wings" system, which, in the opinion of Director Walter Rice, is the most effective method for securing clean streets. Where all the residents contribute the expense for keeping the entire street clean is not very great, individually. With the city contributing the money allotted to the streets where the residents have taken the matter of clean streets into their own hands, the cost to each citizen will be still less.

"The work of the citizens has been so satisfactory that since the action of the Board of Control it is probable more citizens will see to it that their streets are kept clean."

Birmnigham, Ala., is much dissatisfied with the contract method of garbage removal.

Wilmington, Del., has passed an ordi nance against throwing scraps of paper or other trash upon the streets.

Finance.

Taxation in the Canary Islands.

Taxation in the Canary Islands is of two classes: National and municipal. The rates are regulated, according to the population of the parish, town or district. In the case of taxable salaries, the percentage varies according to the amount of the salary.

Among the various taxes levied is the "cedulas personales," a species of passport, which all must hold and which must be renewed annually at a cost of from 50 to 100 pesetas, or from $7.50 to $15. Thirty-three and one-third per cent. of this tax belongs to the municipality.

In municipal taxation a rate is fixed by law on all consumable goods brought into the towns. On the basis of this rate and the population, the Government declares what amount ought to be returned to the public treasury. To this 50 per cent. is added by the municipality, and tenders are invited from those willing to farm the tax. What remains above the Government quota belongs to the town, and the farmer makes what profit he can, often a very large one. Birds entering Santa Cruz, for instance, pay 0.21 peseta each; fish, 0.04 peseta per kilogram; meat, butter, etc., about 0.21 peseta per case of 65 pounds. All animals killed inside the town limits must also pay duty. At present the peseta has a value of about 15 cents in United States money.

New Jersey Franchise Tax Law.

The public francrise tax act passed at the last session of the New Jersey Legislature does not take effect until January 1, 1901. The first assessment will be made on or before the third Tuesday of October, 1901, based upon the gross receipts of the business of the companies taxed for the preceding year ending December 31, 1900. The act provides for an assessment of 2 per cent. of the gross receipts of the business done by corporations or persons having acquired authority or permission to use or occupy the streets, highways, roads, lanes or public places.

The companies affected by this act are, generally speaking, water and sewer companies, cable, electric, and horse railroad companies, telegraph and telephone companies, oil and pipe line companies, gas and electric light companies, because these are the companies whose business requires the use of the public streets and highways. Other persons and companies are not affected.

The 2 per cent. tax on gross receipts of the business done by these companies is in lieu of the taxes now paid to the state for state purposes as a franchise tax or license fees, but it is in addition to the tax now paid on the property of these companies in the taxing districts where located. The report of the State Board of Assessors, based on the returns of these companies for the year 1898, shows that the tax in round figures was $120,000 paid to the state, which may reach, for the year 1900, the year in which the first tax will be levied under this act, $130,000. A 2 per cent. tax on the returns available of the companies would be in round figures, $280,000., which does not include the tax on water and sewer companies. They are taxed on the capital stock.

There are no available returns on which to estimate their gross receipts, but many of these companies are owned by the municipalities or are comparatively small, except the Hackensack Water Company. The above figures will not be greatly increased, but it is fair to presume that the tax for the year 1901 under this act will amount to $300,000, of which the state relinquishes the sum of $120,000 and the companies pay an additional $180,000. Except where these companies now by contracts or ordinance of the municipalities pay already for the use of the public streets and highways, the amounts so paid shall be considered a payment on account of, or in full, as the case may be, for the franchise tax, to be apportioned under this act.

If the amount so payable is greater than the amount of the franchise tax so apportioned, such payment shall be in lieu thereof, and if less, the difference in amount shall be payable as provided in the act. Jersey City now by ordinance gets $600 from the North Hudson County Railway Company and about $1,400 from the Consolidated Traction Company. Newark gets in round figures about $75,000 from the North Jersey Street Railway Company by ordinance. The local assessors assess the property of these companies the same as other property and value such property located in, upon or under any public street or highway separately, on which the companies pay the same rate as other property.

The franchise tax is then distributed to the various taxing districts in proportion to the value of the property located on or upon the public streets or highways, as shown by the statement filed by the local assessors with the State Board of Assessors. There are no figures available, and there will be none until 1901 to show how much each taxing district will get. It is probably fair to assume that half of this $300,000 will go to Essex and Hudson counties, if the value of the property in the streets and highways in these counties bears the same proportion to the other property in these counties that the ratables of these counties bear to the ratables of the entire state, and that a quarter will come to Hudson county, and on the same assumption about half, or a little less of this, should come to Jersey City, or, in round figures, about $30,000, less $2,000 now received by Jersey City as license fees under the existing ordinances.

By the act the money expended by the companies for paving or repairing any street or highway shall not be included in the amount to be deducted from the 2 per cent. assessed on the business as a franchise tax. The Jersey City and Bergen division in Jersey City, the Atlantic City road and the Cape May, Delaware Bay and Sewell's Point railroads are assessed by the State Board of Assessors under the act of 1884 as steam railroads, from which the state gets one-half of one per cent. for the use of the state on the first-class property, so-called, and at a rate not exceeding $15 per thousand on the other property for local purposes. From the Jersey City & Bergen Railroad the state received for the year 1899, $8,754.27, which properly belongs to Jersey City, but the franchise tax act of 1900 provides that none of its provisions shall be construed so as to alter the act of 1884. The assessment on these roads should go to the municipalities in which they operate and it should be changed either by consent or by legislation, if necessary. Full local rates should be paid on the value of these properties as levied by the local assessors the same as other property of a like class. The state does not need the revenue; the localities do, and it properly belongs to them, and in the case of the Jersey City & Bergen Railroad Company there is no substantial reason why it should be otherwise.

The method of distributing the tax provided in the act, viz., in proportion to the value of the property located in, upon or under the public streets or highways as returned by the local assessors to the State Board of Assessors, will undoubtedly have a tendency to cause the local assessors to place a high and perhaps an abnormal value upon the property, because the higher the value placed by the local assessors the greater proportion of the 2 per cent. tax will come to the municipalities, and the act provides that no change in the apportionment of the franchise tax shall be made in case such valuations are afterward reduced by the appellate boards.

This act, as compared with the New York act, is simple in its application, requires no money or additional official machinery to put its provisions in operation. Like all new tax legislation, time and experience alone can demonstrate which may be the better law in causing a substantial equality in the burden to be borne. It is safe to say these acts are a step in the right direction; the principles involved have come to stay as a part of our tax laws.

If the New York act and the assessments imposed thereunder should be sustained by the courts, one of the indirect results must inevitably be a curtailment of the high capitalization of such companies, as the value of the franchise is based upon the value of their capital stock and bonded indebtedness, which is known as the Illinois rule. The New Jersey act measures the value of the franchise by its gross earnings and distributes the tax to the municipalities in proportion to the assessable value of the property in or upon the streets or highways.

GARBAGE PRACTICE.

The garbage carts of Baltimore are each fitted with a pair of bells.

* * *

Milwaukee, Wis., proposes to bury its garbage, and is now looking for farms in its vicinity to be used for that purpose.

* * *

Experiments have been made with the residue of the garbage incinerated in the Chicago crematory, and it is found that when mixed with cement the residue makes a good quality of drain tile. It is also being used with cement for sidewalks.

* * *

Commissioner of Street Cleaning Iglehart of Baltimore has instructed his garbage cartmen not to mix ashes and garbage in making collections, nor to deposit any ashes mixed with garbage on the ash dumps. Householders are requested not to deposit ashes and garbage in the same receptacle.

* * *

The Board of Works of Indianapolis, Ind., has closed a twenty-year contract with a local firm, allowing the placing of metal boxes on street corners in which waste paper may be placed by the passer-by. No garbage nor manure may be placed in the boxes. The contract provides that there shall be fifty boxes by January 1, 1901, 100 within a year after that, but never more than 500. Advertising is allowed on the boxes, and this is the desirable feature of the contract. The advertisements shall not be of paper, but shall be of paint or metal letters. The city is to receive 15 per cent. of the gross receipts from all sources semi-annually, the city comptroller having access to the company's books. Four other offers were made, the per cent. of gross receipts ranging from 3 to 12 1-2.

DEPARTMENT OF INQUIRY.

The Editor of "City Government" will undertake to furnish, through this department, replies to all inquiries pertaining to municipal affairs sent in by subscribers.

Cause of Bad Odors and Taste in Public Water Supplies.

New York, June 21, 1900.

Editor of "City Government:"

In reply to the inquiry of "J. E. C. S." in the June issue of your journal, relating to the cause of the bad odor and taste in the water, I would refer him to papers read before the American Water Works Association and the New England Water Works Association. I send them to you by mail under separate cover.

The papers have been forwarded to our correspondent. For the benefit of other readers it may be said that Mr. Hill's papers were published in the May, 1899, issue of our journal.—Editor of "City Government."

Rochester, N. Y., June 30, 1900.

Editor of "City Government:"

In reply to the inquiry of J. E. C. S. on p. 161 of "City Government" for June, 1900, as to the cause of bad tastes and odors in water supplies, it may be said that in most cases where direct pollution by decaying organic matter is excluded, such bad tastes and odors are usually due to an abnormally profuse growth of minute vegetable or animal organisms in the water, resulting from the presence of a suitable food supply therein. This food may be either of organic or mineral origin, and the outbreak of the offensive condition of the water is generally the consequence of a gradual accumulation of such food extending over a considerable period of time. To utilize or transform it, nature provides various kinds of microscopic organisms specially adapted for the purpose, and these in turn become the food of other larger organisms.

Among the latter are the algae, or minute vegetable organisms, and the infusoria, or minute animal organisms, of which certain varieties, such as the diatom Asterionella, the Cyanophytes Anabaena and Clathrocystis, the Chlorophytes Volrox and Pandorina, and the infusoria Uroglena, Synura and Dinobryon, possess the property of imparting various disagreeable tastes and odors to fresh water stored in lakes, ponds and reservoirs. By a careful microscopical examination of the water, the presence and relative number of these organisms can be determined, and by comparison with the results of similar examinations in other localities, a conclusion can often be reached as to the specific cause of the trouble. In the case of waters obtained from deep subterranean sources, other causes for bad tastes and odors exist, although in many instances they are traceable to vegetable organisms of another class than those mentioned above. It may also happen that an offensive taste or odor is imparted to surface waters by organisms large enough to be examined and identified without the aid of a microscopic, and among these may be classed the plants Chara and Oscillaria, and certain fresh water sponges.

Little is yet known about the means of preventing or eradicating such growths in large bodies of water, other than the removal of all accumulations of organic matter from the bottom, and the provision of considerable depth at all points. The same is also true of the sanitary significance of the bad tastes and odors; but in the light of numerous investigations in this direction during the past thirty years, it is fair to say that no material impairment of the public health is probable from the use of an otherwise good water supply when temporarily affected by such growths.

E. KUICHLING.

Regulation of Telegraph Poles.

In reply to several inquiries the following ordinance granting the right to a telegraph company to erect its poles and wires along the streets of Fort Smith, Ark. The conditions and restrictions herein imposed will interest the readers of "City Government." The ordinance, in substance, is as follows:

Section 1. That the right is hereby granted to the Postal Telegraph-Cable Company of Arkansas, its successors and assigns to construct, operate and maintain its line of telegraph poles and wires, fixtures and appurtenances upon, along and over the streets, alleys and public ways of the city of Fort Smith, subject to all of the laws and ordinances now in force, regulating the construction and maintenance of such lines of poles and wires.

Section 2. That said line of poles and wires shall be so erected and maintained as not to obstruct the travel upon said streets, nor interfere with the flow of water in any pipe, drain, ditch or culvert, and in the event change of grade, or bringing to grade any of the streets, alleys or public ways, said poles shall by said company be so changed or set at its own expense as to conform thereto, and said company shall save and hold said city free and harmless from all or any damage arising from or caused by the construction or maintenance of said line of poles and wires; and the acceptance of said company of the terms and provisions of this ordinance shall bind said company to submit to and comply with all reasonable regulations which may hereafter be imposed by said city.

Section 3. That this grant shall not be exclusive, and the city reserves the right to grant like rights of the use of the public streets to others for similar uses; provided that such use shall not prevent or interfere with proper exercise of the rights and privileges herein granted.

Section 4. That the location of the said poles shall be under the direction and supervision of the city engineer.

Section 5. The construction and erection of said line of poles and wires within said city shall be commenced within three months of the passage of this ordinance, and shall be completed within six months from said date. Upon failure of said company to comply with these requirements, or with all other requirements of this ordinance, all its rights hereunder shall be forfeited and said city shall have the right by ordinance to declare this contract annulled.

Section 6. In consideration whereof, the said city of Forth Smith may have the right to use as much of the upper cross arms of said poles as may be necessary for its fire alarm and police telegraph wires; but the use of said cross arms and poles by the city as aforesaid shall not operate to preclude or debar said city from imposing and collecting a reasonable license tax or rental from each of said poles that may be placed upon any of the public streets or alleys of said city provided that said city's use of said poles shall not be so made or continued as to in any manner obstruct or interfere with the use of said poles by said telegraph company, and all work of placing wires or fixtures of said city upon said poles shall be under the direction of the telegraph company's manager in said city.

Section 7. That this ordinance shall take effect and be in force from and after its passage and approval and filing by said telegraph company of its unconditional acceptance of the terms thereof.

Vehicle Licenses.

———, Ind., June 27, 1900.

Editor of "City Government:"

Can you tell us where we can obtain a list of those cities which place a tax on vehicles? We desire to take up the subject in this city.

Tribune Printing Co.

On pp. 22-23 of the January, 1900, issue you will find a schedule of license fees for vehicles now in use in four cities. Nearly all the larger cities have vehicle licenses and many of the smaller ones. Some cities license every vehicle in use, while others limit it to those kept for hire or pay.

Following is the schedule of fees employed in a Pennsylvania city of the third class:

McKEESPORT, PA.

The following schedule applies only to such vehicles as are kept for hire or pay, including every cart, dray, wagon, carriage, buggy, hack, omnibus, or other vehicle:

For one horse wagon, cart, dray, carriage or buggy, per year	$3.00
Excepting buggies in the livery business, which shall pay	2.00
For each two-horse vehicle named in above list, per year	5.00
For each four-horse vehicle, and hack or ominbus drawn by two horses, (for each additional horse attached to such vehicle, 50c	6.00

—[Editor "City Government."

Restriction of Use of Rotary Gongs.

City Clerk's Office, ———, Pa., June 27, 1900.

Editor of "City Government:"

At a meeting of the committee on fire, held a few evenings ago, it was decided to eneavor to restrict the use of rotary gongs to the fire and police departments and tne ambulance.

The occasion for this, is the fact that a large number of retail ice cream dealers in this city have been using this kind of gong, causing much annoyance. Can you give me any information as to such restriction in any other city?

E. L. Lindemuth, City Clerk.

The editor knows of no city which places a restriction on the use of the rotary gong. He has visited the leading cities of the country, and many of the smaller ones, during the past year and a half and has observed the use of the rotary gong outside of the police, fire and hospital service, in but two or three. It is more than likely that there is no such restriction. The Editor would be glad to be informed of the existence of any such.

As to the possibility of correcting the evil in the above instance, it might be accomplished, First, by a conference with the offending parties; Second, by ordinance, provided it can be shown that the use of the bell outside of the city departments mentioned is inimicle to the best service of said departments; or, the bells may be declared a nuisance, and so their use prohibited, except in cases of necessity, as in fire and other service.—[Editor of "City Government."

Montreal, Canada, has a regulation which provides that when a citizen's garbage exceeds two barrels full he must remove it at his own expense.

* * *

Fresno, Cal., has a rule in vogue from May to November which prohibits the hauling of garbage between the hours of 7 a. m. and 9 p. m.

MUNICIPAL ASSOCIATIONS.

Texas Organizes State League.

The Mayors of Texas cities met in convention at Waco, June 11-12, and organized a Mayors' Association. The object of the association as set forth in the constitution adopted is the improvement of municipal affairs of the towns and cities of Texas, the encouragement of economical government, progressive thought and action as applied to municipal affairs.

The Mayors of all towns and cities are eligible.

The following officers were elected:

President, J. W. Riggins, Waco.

Vice-Presidents, Marshall Hicks, San Antonio, and Sam Lewis, Yoakum.

Secretary, R. M. Chapman, Greenville.

American Park and Outdoor Art Association.

The fourth annual convention of the American Park and Outdoor Art Association was held at Chicago June 5-7. It was the most largely attended and most important session in the history of the organization.

Among the papers presented were, "Landscape Gardens," by Mrs. Cyrus H. McCormick, Chicago; "Trees in Composition," by Mr. W. M. R. French, Director of the Art Institute, Chicago; "The Proper Setting of Statuary in Public Places," by Mr. Wm. Ordway Partridge; "Art in Landscape," by Mr. S. M. Millard; "Park Roads," by Mr. J. Frank Foster, Chicago; "The Influence of Public Parks Upon the Morality of the Community," by Rev. J. A. Rondthaler, Chicago. There were several reports given of equal importance, including one on "Advertising Bill Boards," "Prizes for Designs," "Park Census" and "Park Accounts."

The address of the retiring president, Mr. Charles M. Loring, contained much mater relating to the field of local improvement associations. A digest of this address and several of the reports and papers will be found in this number of "City Government." Several others will appear in the August number and it is only regretted that more space cannot be given to the report of this convention.

A resolution was unanimously adopted which provides for the organization of a Woman's Auxiliary in order that it may co-operate with and secure the aid of the General Federation of Women's Clubs in promoting the objects for which the A. P. and O. A. A. was organized.

The following is the list of officers for the coming year:

President, L. E Holden, Cleveland; Vice-Presidents, Lewis Johnson, New Orleans; M. L. Moore, Toledo; Thomas H. McBride, Iowa City; Linus Woolverton, Grimsby, Ont., Canada; E. J. Parker, Quincy, Ill.; John C. Olmsted, Brookline, Mass.; Secretary, Warren H. Manning, Boston; Treasurer, Ossian C. Simonds, Chicago.

Camden, N. J., requires all garbage pails to be covered.

Health Officer Deuschle of Columbus recently disapproved an ordinance authorizing a local company to establish a garbage transfer station. He refused his approval because the company would not agree to line the cars with metal.

League of Wisconsin Municipalities.

The annual session of the League of Wisconsin Municipalities was held at Janesville, June 7th and 8th. There were papers read on "The Relation of Uniform State Accounting to Wisconsin Municipalities," by Stephen W. Gilman, Madison; "The Recent Revolution of the Scientific Disposal of Sewerage," by Dean J. B. Johnson of the Wisconsin state University, Madison; "Damage Suits Against Municipalities," by John A. Alyward, Madison; "The Relation of the Taxpayer to Municipal Expenditure," by William J. Anderson, Madison; and an address on the "Duties of Citizenship," by Governor Scofield. The address of the latter is given elsewhere in this number.

This session of the league was a pronounced success and betokens a growing interest in good government. The attending delegates were most cordially received by the officials of Janesville, who carried out an elaborate program for the entertainment of their guests.

The following officers were elected for the ensuing year:

President—Victor P. Richardson, Janesville.

Vice President—Mayor Stiles, Sparta.

Secretary—S. E. Sparling, Madison.

Treasurer—Mayor Boyle, Viroqua.

For District Vice-Presidents.

First—Michael Higgins, Racine.

Second—M. J. Haven, Madison.

Third—S. A. DeLop, Richland Center.

Fourth—E. D. Hold, Wauwautosa.

Fifth—G. Meisner, Oconomowoc.

Sixth—J. S. Morris, Waupun.

Seventh—Mayor Dunderson, La Crosse.

Eighth—S. J. Murphy, Green Bay.

Ninth—J. E. Utke, Marinette.

Tenth—F. E. Dietrich, West Superior.

Viroqua was selected as the meeting place for next year.

Juvenile Improvement Leagues

At the annual session of the American Park and Outdoor Art Asociation, held at Chicago in June, the president, Charles M. Loring, in his address, mentioned some interesting facts about the work of the children in different cities. He said in part:

"During the past year there has been a large increase in the number of juvenile improvement associations. From every section of our country we have received letters of inquiry asking for information as to the best methods of organization, and for forms of constitution and by-laws. In many towns and cities the children of the public schools have been organized into improvement associations.

"A movement for the organization of the school children of Springfield, Mass., resulted in their becoming the guardians of the street trees, and in a public sentiment that demanded of the City Council an appropriation of $20,000 for their care, which was obtained. This is the most remarkable public acknowledgement concerning the value of street trees of which I have any knowledge. When a city of 50,000 inhabitants appropriates so large a sum for such a purpose, it shows an appreciation of the value of trees that should encourage the members of every improvement association in this country to renewed effort.

"Conclusive of the value of improvement associations and the advantage of organizing school children comes to us from other cities, notably from Carthage, Missouri, where the superintendent of schools has taken an interest in educating his pupils in the study of nature. They are taken to the woods by their teachers and given practical lessons in arboriculture, taught the names of trees, shrubs and flowers, and how they grow. This superintendent, whose example should be followed by every one who has the responsibility of educating children, issues instruction in circular letters which he calls "Nature Study Letters," from which I quote a few sentences to you:

"To the Pupils of Carthage Schools:

Dear Friends—Shall we not do our part during the coming summer toward making Carthage a more beautiful city? We can do this and at the same time have lots of fun and learn many things of interest about the soil and plants.

" 'We can learn to grow vines and flowers about our homes and to arrange them so that the effect will be pleasing to all who pass by.

" 'We can learn to use a few square feet of ground in the back yard so as to decrease the family expenses by supplying fresh, crisp vegetables.

" 'You remember how much we learned about the soil and plants from our window gradens. A small garden out of doors will give us even more valuable lessons if we keep our eyes open.'

"Then follows a list of premiums for the most artistic planting, arrangement and trimming of vines on house, veranda and out-buildings, for the best flower garden, and the best vegetable garden.

" 'Carthage already has the reputation of being one of the most beautiful towns in the country. Shall we not by united effort strive to make it even more worthy of this reputation? Information in regard to any of these prizes may be obtained of your teacher.'

"Is it any wonder that this Missouri town has beautiful trees, clean streets and pleasant homes, when its children are encouraged in their natural love for nature? If every superintendent of schools followed the example of Superintendent Stevens, our cities and villages would be more attractive and their citizens more cultured and refined.

"Several teachers in Minneapolis have formed improvement associations in their respective schools, which have proved very successful and of great interest to the pupils. The following facts are gleaned from a report by one of the principals, who is an active member of the Minneapolis Improvement League. In her school building thirteen leagues are well established, each with its own separate organization and list of officers, one and all striving to accomplish the most valuable results in accorrdance with the objects for which they were organized. Besides keeping their own premises and the immediate neighborhood, including the streets, neat and orderly, they cleaned twenty-eight vacant lots and supervised the protection of street trees in the vicinity.

"The labor of one month during the season yielded the following figures:

"4,844 pieces of paper burned; 1,208 bushels of leaves burned or buried; 2,347

tin cans buried; 151 pieces of wire buried; 933 bottles buried; 128 old boots burned; 33 old dishes buried; 31 carcasses buried; 180 rags picked up; 30 barrel hoops destroyed; 75 yards cleaned; 150 pounds of old rubers, collected, were sold for $7.65, which was invested in a picture for the school.

"The chairman of the flower committee conected with the Minneapolis Improvement League reports over eleven thousand children, from twenty-nine schools, already provided with seeds this spring, through the efforts of a few indefatigable workers. This year both flower and vegetable seeds were chosen with special reference to the nature study being pursued in the schools, that the children may have the additional interest of raising in their gardens at home the same varieties of plants that they study in their classes. Little pamphlets on the culture of flowers were furnished with that species of seed; but as the committee were totally ignorant of the proper care necesasry to success with vegetables, it appealed to Prof. Shaw of the State Agricultural College, who readily promised to instruct the youthful aspirants to agricultural honors at his home. The street car company next came to their assistance with the offer of free transportation, and nearly three hundred boys were thus enabled on several successive occasions, to receive practical instruction concerning preparation of the soil, proper planting, succession of crops, and the best way to conquer weeds. Good advice was also given on the culture of small fruits, and, incidentally, they were lead through the green houses and museum which completed this memorable excursion."

Test of the Water Tower.

Under the supervision of Mr. E. J. Mitchell, of the Fire Extinguisher Mfg. Co., of Chicago, a test of one of the company's up-to-date water towers was made at Pittsburg, Pa., recently. Chief Miles S. Humphreys, Assistant Chiefs Hennigan, Steele and McKinley, with others interested, viewed the test.

When the word was given to go ahead the nozzle was shot 65 feet above the ground. Two fire engines were attached to the hose lines that connected in a frog. This supplied a hose four inches in diameter, which was in turn attached to the iron pipe 16 inches in circumference.

After the two engines, one being the first size Metropolitan and the other second size Amoskeag, were at work with a full power the water shot out of the 1 1-2 inch nozzle of the tower until the stream reached a height of over 200 feet above the ground and then broke into a spray that deluged those who were near.

The rush of water through the tower was at the rate of 1,800 gallons a minute with the small nozzle and 2,500 gallons with the 2 1-2-inch nozzle.

The direction of the powerful stream is easily governed, so that the water may be sent into any section of a burning building. Besides the tower there are on the tower truck two Babcock turrets, which are manipulated in much the asme manner as the gunner on a man-of-war does one of the turret guns. These will throw a 150-foot stream.

Besides the tower truck there was another which occasioned much comment. It was a combination truck, having a chemical apparatus, a turret nozzle, hose attachments and two ladders. This was also given a satisfactory test. There were in all four engines, two being larger than those previously mentioned, but all the same makes. These were also attached to the tower. Chief Humphreys continued the test until dark. After it was over he said that he was satisfied with the work done by the new apparatus.

Louisville, Ky., has discontinued the contract system in the removal of garbage. The work is now performed by the city.

Book and Periodical Review.

PUBLIC HYGIENE AND STATE MEDICINE in the United States, The Past and Present Condition of. By Samuel W. Abbott, Secretary of the State Board of Health of Massachusetts. 8vo., pp. 103. Paper covers.

This is one of a series of monographs issued under the editorial supervision of Herbert B. Adams, of Johns Hopkins University. It is included in the department of social economy for the United States Commission to the Paris Exposition of 1900, and contributed to the same by the Commonwealth of Massachusetts.

The subject is treated concisely and a large amount of information is condensed into a comparatively few pages.

"If I were called upon," says the author, "to state in the briefest manner possible what are the most prominent points in relation to public health in the United States, to-day, I would mention first of all the marvelous rapidity with which the introduction of public water supplies has been effected in the past 25 years, specially in the states west of the Mississippi valley.

"Second, the stimulus which has been given to the methods employed for preventing the spread of infectious diseases, through the agency of bacteriological investigations and the establishment of public and private laboratories for aiding sanitary work.

"Third, the necessity of providing a central bureau or department, having authority to collect the vital statistics of the United States, from the different states and territories, and to publish the results of the same. It should also be the duty of such bureau to secure uniformity in the methods of collection and presentation in all parts of the country.

"Fourth, the need of one strong, central sanitary organization at Washington to cooperate with and to aid state and municipal sanitary authorities in every branch of public hygiene. The duty of collecting and publishing the vital statistics of the country might properly be intrusted to such an organization."

* * *

A TEN YEARS' WAR: An Account of the Battle With the Slum in New York. By Jacob A. Riis. Illustrated. 12mo., pp. 267. $1.50.

This is a graphic portrayal of the life of those who are ground under the heel of poverty in a great city. It is not surprising to one who has given the subject more than a passing investigation, that a continuous familiarity with the frightful scenes and conditions found in the great Metropolis should engender a bitterness of spirit in the heart of an investigator. The author expresses much of this feeling in his dedication: "To the faint-hearted and those of little faith this volume is reproachfully inscribed by the author." He not only describes the evil but shows how some of its multiforms have been successfully combatted.

The author omits the index, which, in these days, is unpardonable.

* * *

THE SEPARATE SYSTEM OF SEWERAGE. By Cady Staley and George S. Pierson. Third Edition, Revised and Enlarged. 12mo., pp. 325. Illustrated. $3.

The book fully describes the advantages of the separate sewage system over the double or combined. The authors have condensed a large amount of information into small space, and compiled many useful tables. Illustrations are freely used and every phase of the question of the design, construction and operation of a modern sewer system is shown up. While technical language is employed a good deal, still there is enough that can be fully apprehended by the layman to make the work one of great value to the average city official who would like to inform himself in a general way, upon this subject. The modern methods of sewage disposal are explained. The one defect of the book is its lack of an index.

* * *

THE CITY PROBLEM. By Albert A. Haskin. 12mo., pp. 153. $1.

"The City Problem," is a collection of sermons, evidently based upon the superficial observations of an impractical reformer. It neither states the problem nor attempts to offer any solution.

* * *

THE DISTRIBUTION OF WEALTH: A Theory of Wages, Interest and Profits. By John Bates Clark. 8vo., pp. xxviii-445. $3.

PROCEEDINGS AND PAPERS of the Twelfth Annual Meeting of the American Economic Association, in December, 1899. 8vo., pp. 288. $1.

HISTORY AND FUNCTIONS OF CENTRAL LABOR UNIONS. By William Maxwell Burke. 8vo., pp. 125. $1.

A COUNTRY WITHOUT STRIKES. By Henry Demarest Lloyd. 12mo., pp. xiv-183. $1.

NATURE'S CALENDAR: A Guide and Record for Outdoor Observations in Natural History. By Ernest Ingersoll. 12-mo., pp. 270. $1.50.

A GUIDE TO TREES. By Alice Lounsberry. 12mo., pp. xx-313. $2.50.

OUR NATIVE TREES AND HOW TO IDENTIFY THEM. By Harriet L. Keeler. 12mo., pp. 533. $2.

Timely Topics in Periodicals.

CHARTER NEEDS OF GREAT CITIES. By Bird S. Coler, Controller of New York. "North American Review," June.

PREVENTIVE INOCULATION. By Dr. W. M. Haffkine. "Popular Science Monthly," July.

THE CENTRAL CITY OF THE WEST. By Charles S. Gleed. "Cosmopolitan," July.

TREES. By Frank French. "Scribner's Magazine," July.

LATITUDE AND LONGITUDE AMONG REFORMERS. By Governor Roosevelt. "Century Magazine," June.

THE INDEPENDENCE OF THE EXECUTIVE, II. By Grover Cleveland. "Atlantic Monthly," July.

OVER-CAPITALIZED INDUSTRIAL CORPORATIONS. By Edward Godwin Johns. "The Arena," July.

CO-OPERATIVE BUSINESS VS. TRUSTS. By Duncan Mac Arthur. "The Arena," July.

THE REFERENDUM IN AMERICA. By Edwin Maxey, LL. D. "The Arena," July.

THE ETHICS OF CRIMINOLOGY: I. The Restitution to Victims of Crime. By J. Albert Stowe. II. Women as Criminals. By H. Harrell. "The Arena," July.

THE PROVISION FOR CHILDREN IN PUBLIC LIBRARIES. By Katherine Louise Smith. "Review of Reviews," July.

NEW YORK BOTANICAL GARDEN. By D. T. Macdougal. "Popular Science Monthly," June.

POLITICAL CONSEQUENCES OF CITY GROWTH. By Prof. L. S. Rowe. "Yale Review," June.

GOVERNMENT OF A PRUSSIAN CITY. By Edmond J. James. "Annals of the American Academy of Political and Social Science," May.

ELECTRICAL EQUIPMENT OF OFFICE BUILDINGS. By R. P. BOLTON. "Engineering Magazine," June.

Municipal Books.

We have compiled a list of municipal books to meet a demand that has long been felt. There are but few people who know how to go about the selection of books on these subjects from the many publishers and considerable time is involved in the search. The compilation of this list will, therefore, save city officials both time and money, and it is for this reason that we publish it, from month to month.

We call attention to the many books listed and advise our readers who desire to be thoroughly posted on municipal work to order such books as will best suit their purpose.

The study of municipal problems and the working out of them on business lines is a matter of recent growth, but is of such vast importance to every citizen that he who fits himself earliest for the proper handling of them will be the first to be recognized as leader in municipal work in the various cities of this great nation.

The citizens of Rochester, N. Y., are complaining at the rate of four or five a day about the non-collection of garbage. The city can fine the contractor $1 for every failure to collect garbage.

Cesspool Pump.

U. S. Sanitary Co. of Washington, D. C., is constantly adding new appliances to its equipment and list of goods for sale, the latest of which is an Odorless Diaphragm Force Pump for emptying cesspools, etc. When it is mounted on a low truck, it can be handily moved from place to place for use. It is also selling the corrugated garbage can which is as near perfection as has been attained in that line. It would be well for our readers to write them regarding anything in the sanitary line.

Police and Fire Uniforms.

The man that can thoroughly equip, either firemen or policemen, is Charles H. Sass of 105 N. Fifth st., Philadelphia. His ability to furnish quickly any equipments or supplies has brought him a handsome business, and it would be well for any department man to keep his address for future reference, or for any need of any of the following articles to write at once for samples, or price, or information.

Mr. Sass supplies fire hats made of leather, aluminum or papiermache; caps, belts, shirts, badges or rubber goods; banners, flags, seals, trumpets and uniforms.

The Charlton Sweeper in Troy.

The city of Troy for years has cleaned all its streets by hand at large expense. Through the invention of "City Government" the present administration determined to try the machine sweeper. Accordingly Superintendent Brady, of the Charlton Mfg. Co., shipped one of his sweepers here on trial a few days ago. One of the dirtiest and most uneven streets in the city was selected. The machine was set in operation, commencing with the gutters and working toward the center, and for a distance of three blocks the street was cleaned in a short space of time—about one-tenth of the time that would be required by hand. As an illustration of the thoroughness with which the work was performed, the writer saw the machine pick up, readily, all sorts of dirt, including shoes, boots, pieces of old iron and wooden hoops, wire and so forth. As a result of this test Troy will have some machines in operation before long.

TRADE NOTES.

—The rapid progress made by the Monarch Fire Appliance Company, of New York, in establishing their fire extinguisher, "Kilfyre," is only a proof of the assertions made in "City Government," three or four years ago. It has been accepted by many fire departments for special work at fires and found in many instances to have done its work in shorter time and with less damage to property than water.

—The city of Little Falls, N. Y., has passed an ordinance favoring the purchase of the voting machines of the United States Voting Machine Company of Jamestown, N. Y. The machines will be used for the first time at the November election this fall.

—The New York Filter Manufacturing Co., 15 Broad street, New York, reports that it has received contract for the complete equipment of the Watervliet Arsenal with filters of 400,000 gallons capacity; also a contract for a 12,000,000 gallon filtration plant for the Tinern Manor Water Company, Redbank, N. J.

—The New York Filter Mfg. Co., 15 Broad street, New York, has closed a contract with the Sharon Water Works, Sharon, Penn., for a 1,500,000 gallons filter plant.

Louisville Wants Municipal Gas.

Mayor Weaver of Louisville, Ky., is making a strong effort to obtain entire control of the gas plant now in operation. The city owns a large share of stock but wants to own all.

"I am in favor," said the Mayor, "of the outright and complete municipal ownership of the Louisville Gas Company, or, if that result can't be accomplished, then the sale by the city of its entire stock, amounting to $925,000, plus whatever premium the best bidder may offer. In other words, let us own all or none."

Mayor Weaver said he was frank to admit that he did not believe the city could ever purchase all the stock of the Gas Company, for there are too many difficulties in the way, and they are almost insurmountable.

The Mayor in discussing what disposition should be made of the money if the city should sell its gas stock, said: "I would purchase Central Park first. It would be a disgrace to allow the park to be cut up into building lots. In a short time Central Park will be right in the heart of the city, and it will be of untold value to the people.

"But I want to say right here that I would not give one cent over $200,000 for the property. It is not worth any more than that and I would oppose the offer for a cent more.

"The next thing I would do would be to build an armory for the city. Louisville has needed an armory for years and I have always favored the building of one. I was greatly surprised and deeply disappointed when the General Council refused to appropriate money for this purpose. If I had my way, the time would not be far distant when Louisville could boast of a magnificent armory with a mammoth auditorium attached worthy of the name and fame of the city, and equal to any emergency or demand. If Louisville had such a building she might be taking care of the National Democratic Convention today. For the armory I would spend $100,000. This amount would make it what it should be.

"The remainder of the money I would use in the construction of sewers. Intelligent people need not be told that the sewer problem, relating so directly and so vitally to the public health, is of supreme importance, demanding unremiting attention. For years this department of our public work has failed signally to keep pace with the growth and expansion of the city.

"The sewer problem in Louisville is developing into a serious one, and it is time that steps were being taken to improve the system. There are now any number of damage suits pending against the city on account of overflowing sewers, and they are increasing every day. The minute the cellar of a property owner is flooded by a detective sewer he files suit for damages against the city. However, the health of the people is of the greatest concern and the sewerage system in the southern part of the city demands immediate attention."

Pavements in Switzerland.

The city of Basel has made within the last few years a series of experiments in street paving that may have a certain interest on account of the employment on a small scale of American pitch pine, as well as by reason of the general importance of the subject.

It appears from an official report that the first wood pavement was laid in 1888 in one of the chief thoroughfares, the owners of the contiguous property being obliged to pay the difference between the cost of stone and wood pavement. The material used was the fir (Pinus abies), a tree that covers the neighboring Jura and Black Forest and gives to the latter region its name. In a few years this pavement became worthless, and the government required the property owners to pay half the expense of new pavement and of repairs to the old, grading and the beton support being still at the charge of the city.

At the same time, an effort was made to secure greater durability by an improved treatment of the wood blocks and by securing uniformity in the material, lack of which had been one of the chief causes of the rapid destruction of the pavement. These preparatory measures were executed by the government itself instead of by the contractors, as in the first instance, and somewhat better results were obtained. Still, in a short time repairs were needed, and in five or six years the complete renewal of the pavement was imparatively necessary. The lack of sunlight in the narrow streets which are most frequented promotes the decay of the wood. In the single large square where that material is employed, it has proved more satisfactory. But the concentration of the traffic on the parts of the streets not occupied by the tram lines and the sharp shoe calks of the horses, especialy in the damp winter weather, soon literally hacked the pavement to pieces.

For the present, the extension of the wood-pavement system has been abandoned; but the renewal of that now existing must be provided for, because of the expense of the stratum of beton. For this purpose, however, fir blocks will no longer be employed. Several other woods are under consideration. American pitch pine, tried on a small scale a few years ago, is rejected on the ground that it has so much waste (sap wood) that its inspection is extremely difficult. Larch from the Canton of Valais (Pinus larix, a species strongly resembling American larch or hackmatack) was laid experimentally in 1894, and is now in such a condition that an existence of nine or ten years is anticipated. It is said that this material has proved fairly satisfactory in Paris. Oak and pine are rejected, both on acount of their too great cost and their relative unsuitableness for the purpose.

On the whole, it is thought most practicable to use a new material which is said to be in favor in Dresden and Leipzig—the Australian karri wood.

Below is a tabular statement of the presumed cost per spuare meter (10.7642 square feet) and the estimated duration of the different kinds of wood already used or under consideration:

Wood.	Price.	Duration (years).
Fir from Jura or Bernerober-land, already used	$1.98	5 to 7
Fir, in future	2.22	6 to 7
Larch from Valais	2.35	9 to 10
Larch from the Grisons	2.88	9 to 10
Pitch pine from America	2.75	10
Karri wood	3.86	18

According to this computation, karri blocks would have to be renewed but twice in thirty-six years, costing only $7.72 per square meter, while fir must be renewed six times in that period at a cost of $13.32. Karri wood will therefore be used for renewing the existing wood pavement.

For the streets now paved with cobblestones from the Rhine, as well as for the macadamized streets that are to be paved, it is proposed to use large hewn quarry stone. A quartz sandstone from Alsace which was laid on trial a few years ago has given excellent results. By setting such stones closely and carefully together, it is claimed that a smooth, durable street is obtained which is almost as noiseless as one paved with wood, costs only $2.50 per cubic meter (35.316 cubic feet), and will last thirty years.

As a further experiment, a certain quantity of Belgian porphyry is to be used—a stone said to be extremely durable and requiring hardly any expenditure for repairs.—"Consular Reports."

Duties of Citizenship.*

By Governor Scofield, Wisconsin.

Citizenship, its duties and pissibilities, is a well-worn subject in public gatherings of this kind; but if it were more threadbare than it is, it would still be timely and appropriate, for we are yet far, in this great nation of ours, from an ideal citizenship. Indeed, it is doubtful if we have yet conceived an ideal high enough for those enjoying the glorious privilege of American citizenship to reach after. We can never form an ideal, however, any more than we can reach one, without seeking to do so; and the truest and most effective seeking, here as in other fields, is in the application of remedies to known evils. That is to say, we will the sooner reach an ideal citizenship by remedying the evils we see, neglecting none.

There are higher interests involved in citizenship than those of dollars and cents, though all interests are so closely related as to be difficult of separation. Those considered as purely political, are highly important; and here our sins of omission are still greater than in the domain of business. I do not ask you to become statesmen or politicians, but citizens in the truest sense, when I urge you to come to an intelligent understanding of your obligations. We do not need political doctrinarians who theorize upon the political duties of others, but citizens who will recognize those duties as personal, and will courageously perform them.

So important is it that the political obligations of citizenship be met, that I am disposed to class them with religious duties. The founders of this nation so classed them. We shall reach a higher civilization when every intelligent man comes to place the duties of citizenship among the sacred obligations of life. A man cannot neglect his duty to his family without being an object of reproach; yet by common consent and participation in the wrong, we excuse the man who ignores his obligations to the state which protects him and makes it possible for him to provide for his family.

So many evils flow from this indifference to, or ignorance of, our political obligations, that it cannot be too severely deprecated, nor touched upon too often. You who are dissatisfied with the public service, do you know that the remedy for the evil lies in your own hands? You who object that politics are run in the interest of the few, and that few the worst, can make politics what you will. In the one matter of the civil service do you not know that if the people of this state generally were to interest themselves but for a year or two in primary elections, the whole system of public service would be revolutionized and all appointive offices would be filled on the basis of competency and fitness, and the tenure of the incumbents made to rest upon merit, rather than upon obligations for political service? This, gentlemen, is practical civil service reform.

To the average citizen the work of carrying on public affairs seems remote, and he does not charge himself with the duty of getting near to it. But it means very much to your interest and mine that public business be discreetly and honestly conducted and we certainly should keep ourselves informed whether it is. What is more important to us than that we should have an upright and wise administration of public affairs? What comes closer to us than those rights guaranteed us by our citizenship, and which we place in jeopardy by the neglect of the simplest duties? I wish to emphasize the fact that wherein the public business, either municipal or state, is not conducted wisely and honestly, you and I are to blame. We cannot shirk our responsibility by wilfully remaining in ignorance of the facts. The primary principles of business integrity establish our responsibility. Perhaps in no one particular is the lack of a proper sense of responsibility known so clearly as in the matter of tax-paying. There can be little doubt that the American people are more careless, to put it mildly, in regard to tax-paying than in relation to any other public duty. It is not that more money is needed. Certainly our own state is raising all it needs at present, and something beside; but the trouble is rather the disposition to avoid paying which is so generally manifest, and here our citizenship must be improved if we are to continue to grow as a nation. I wish to say here, in passing, that on the administrative side of government there is shown too much of a tendency to increase the public revenue through taxation. There is a serious danger here. Every dollar raised by taxation beyond the legitimate needs of government invites extravagance and corruption, and thus jeopardizes the welfare of the state or nation.

There is too much of a disposition to look at the making of laws as the panacea for all the ills that beset us. But it is of so much greater importance, in the narrowest, as in the widest sense, that each man do his duty honestly as a citizen. What we need is not more laws, but some method of so stimulating the conscience of the individual, that a man will be ashamed not to meet his political obligations. If each will "build over against his own house, the wall of protection, against corrupt methods in politics and slatternly ways of amdinistering public affairs, will rise."

There is no law or principle which will absolve us from a strict compliance with the duties of citizenship. You can no more delegate the duties of citizenship than you can delegate your religious duties. You and I have no right to neglect a single duty which it places upon us, in the hope that that duty will be performed by another. It is just as true in the political world as in the field of morals, that whatever work you and I leave undone will never be performed. I wish I might impress this upon you strongly. What we need above all things, and it is so plainly emphasized—especially in every city election in this state—is an awakening of the public conscience upon the subject of citizenship.

It is blind patriotism to sit complaisantly trusting in the greatness of our American institutions while those institutions are being undermined through our neglect to properly protect them. I have no doubt that the majority of you are keenly alive to your religious duties, but I am here to say that no man can be truly religious, no man can be much more than a hypocrite, who is devoting himself to his so-called religious duties and neglecting the great duties of citizenship. I mean by that that true religion is altruistic, it is the golden rule applied to the things of every-day life; and the man who does not do his manifest duty toward his fellowmen cannot be truly religious. I am making no mistake here. I do not wish to detract any from the importance of the religious obligations which rest upon every man, but I want to emphasize and give proper importance to those which, in the highest sense, are religious—our duties as citizens.

Every time a dollar of the public money is wrongly expended it is our fault. And the real evil is not merely that there may be public money extravagantly used, or that there may be corruption in its expenditure, but for every dollar that is wrongly expended, the beneficiaries of the state, the helpless classes which we have so generously tried to provide for, are wronged, and public morals are to that extent debauched. Every man who has a pride in being a citizen of this state, or who receives the protection of the state, should feel a personal responsibility in this matter; and where the sense of responsibility is lacking, both the individual and the state must suffer.

* An address delivered by Governor Scofield before the annual gathering of the League of Wisconsin Municipalities at Janesville, June 7-8.

Knickerbocker Telephone Company.

The above caption is the name of the new telephone company which will "buck" against the long time monopoly of New York city. The main office is located in Manhattan and the Brooklyn headquarters have recently been located in the new Rothschild building. As an evidence that the new company has come to stay, a ten-year lease of the premises has been duly executed. The Brooklyn division will be under the management of William B. Larabee, superintendent, and Homer B. Mason, a son of F. C. Mason, superintendent of the Police Telegraph Bureau, will be his assistant.

Service over the Knickerbocker system will be about 60 per cent. lower than over the system at present in operation and subscribers will have the advantage of being able to communicate with subscribers in any of the five boroughs without additional charge, while subscribers of the present system are forced to pay extra for all calls outside of their own borough or town. The additional message rate over the new system will also be lower.

Unlimited service: Busines stelephones, $120 per year; residence telephone, $60 per year.

LIMITED SERVICE.

No. of Messages Sent in one year.	Annual Rate.	Additional Messages.
700	$60	6c.
1,000	70	6c.
1,250	80	5c.
1,500	90	5c.
2,000	100	4c.
2,500	110	4c.

Gowns for Councilmen.

Last winter a Boston alderman distinguished himself by offering a resolution to ask the Federal Government for the use of the warship Boston to take the Board of Aldermen of that city on a junket to the Paris Exposition. Now Councilman Junk of Columbus, Ohio, comes forward with a proposition of almost equal absurdity. He proposes that hereafter members of the City Council wear black gowns, like those worn in foreign countries by city officers, when taking part in a parade.

The suggestion was made during a discussion of a parade some time ago, in which the council was almost lost by being assigned a position in the rear end of the procession. It is quite possible that some one of the members of the Council may introduce a resolution at one of the meetings adopting Mr. Junk's plan.

FIRE ASPHYXIATION.

A CHEMICALLY COMPOUNDED POWDER THAT LAYS THE FIRE FIEND LOW AND LEAVES HIS PREY UNHARMED.

Remarkable Achievements of Kilfyre, the Product of Modern Science—A Three-Pound Tube Puts out the Fiercest Blaze Under Any Conditions—It Acts Like Magic Upon Electric Fires—Women or Children Can Apply It.

Some one in attempting to dissect that subtle imponderable now known the world over as "American humor" has said that its essence is its unexpectedness, says a writer in the New York "Tribune." The same might be said of the demon Fire. If that irresistible gentleman would send notice a day or two in advance of his intended visits he would at once lose all his terrors.

About four years ago a group of scientific men had their attention attracted to a new and marvelously simple weapon, so fatal to combustion, so adaptable to the use of the inexperienced, and so certain in its results, that they named it "Kilfyre," and, organizing a company, the Monarch Fire Appliance Company, with offices at No. 27 William St., New York, proceeded to put it upon the market.

Kilfyre in itself is a finely pulverized brownish powder, not unlike the fine dust one could scrape together on a clay road in times of draught.

The long cylinder in which Kilfyre is kept makes it always convenient for use as the cap is removed by simply pulling down from the hook on which it is suspended.

It would be well for the public to remember that Kilfyre is the only fire extinguisher in powdered form. There are no acids to injure the daintiest fabric; no water to freeze and the powder will not lose its fire destroying properties by standing.

There are no conditions of fire this "Kilfyre" will not meet. Water and liquid extinguishers will not always reach the fire, as for instance, in a chimney or flue or in a ceiling, but the draft will always draw this fine powder up the chimney or through any small opening, as has been practically shown, many times. As shown by the accompanying cut this was demonstrated beyond doubt in Buffalo last June, under direction of Chief McConnell, of the fire department, and was described in the "Buffalo Courier" as being instantaneous in effect.

There are many hand appliance for fighting fire. But most of them have proven useless. Why? being liquid form and containing acids, they corrode the metal receptacles, sealing the covers with rust and making them practically useless just when needed.

The liquids are affected by the elements also and have been found to be frozen when most needed as may be seen from the following clipping of "The Norfolk (Conn.) Hour" of January 6, 1900: "That the water in the extinguishers on Hope Hose wagon freezes was amply demonstrated to Lieutenant H. H. Magner's satisfaction last Friday. When he went to refill the cylinders he found something hard inside, and he brought it into the kitchen to investigate. While examining it there was an explosion, and the chemical was thrown over Mr. Magner's hand and clothes and around the kitchen."

Here another danger of the liquid extinguishers is rather more than hinted at—explosion. Any one at all familiar with chemistry knows that the affinity between strong acid and carbonate of soda is almost beyond limit in its power. Chain this power in a rust-eaten, half-corroded chamber, and imagine the result of calling up the force by bringing the acid and base into contact. "The Chicago Record" of July 5, 1897, laconically puts it thus: "L. Matthews, wealthy banker, used liquid extinguisher; exploded; part of skull gone." "The Nashua (N. H.) Telegraph" of December 20, 1898, say that "H. E. Farnum sues to recover ten thousand dollars for the loss of his eyesight. A liquid extinguisher in the hands of Mr. Worthen was discharged in his face, causing horrible burns and the loss of his eyesight." So much for the liquid extinguishers. They claim to protect us against fire, but who shall protect us against the extinguisher?

The non-explosive feature of Kilfyre and the fact that its contact with water, only makes a harmless mud combined with the fact that in lamp and oil stove or gasoline explosions it is the only sure extinguisher make it especially adapted to home use. If the children get hold of it they can do no harm more than to soil their clothes or make some of those tempting mud pies, and what they may leave in the tube is still ready for use. The following letter from Springfield, Mass., proves that it does not deteriorate by age:

"A fire broke out in the kitchen of my house while asleep last evening, which would probably have caused my death had it not been for one of your Kilfyre extinguishers I purchased nearly three years ago."

The Standard Oil Company is credited with a thorough knowledge of its own affairs, and as its dealings are largely in naphtha, benzine, gasoline and other highly inflammable products, its choice of a fire-fighting appliance should carry great weight. They are ordering supplies of Kilfyre from the Monarch Fire Appliance Company, and are equipping their refineries and agencies throughout the world with the tubes.

It is well known fact that water used at fires in many instances, cause a greater loss than the damage by fire. This is especially true in electrical work and the pre-eminent utility of the dry powder, Kilfyre, has been established.

Frank Wood, superintendent of two great telegraph companies at Wilmington, Del., and Lancaster, Penn., says: "It affords me great pleasure to recommend the use of Kilfyre dry powder extinguisher to any and all telegraph or telephone companies for use around their offices where there is a liability of crosses from electric light, trolley or other sources. It would be useless for me to tell a practical electrician the effect a liquid chemical would have upon their boards. Kilfyre is the only safeguard that I know of that can do the work in the right place and not damage other portions of a cross-connecting or switch-board. A switch-board saturated by liquid might as well be destroyed by fire, so far as its future use is concerned, for it would be no better than junk. A plenty of Kilfyre extinguisher and no liquid is my motto for the protection of all electrical devices."

The Erie system of the Bell Telephone Company is equipping all its exchanges with this appliance. So are the Western Union Telegraph Company, the Postal Telegraph Company and the New York and New Jersey Telephone Company. The Edison Electric Illuminating Company also gives it the practical indorsement of equipping its stations with the tubes.

The Consolidated Gas Company, that monster aggregation of capital and brains all familiar with what stands next to electricity as the modern incendiary—gas—is purchasing the tubes in large numbers.

The Equitable Life Assurance Society uses Kilfyre as its reliance against sudden outbreaks of fire.

The hotels of this city are always on the alert for a weapon to use against fire, and such an indorsement as the followng—given in part only—from Stafford & Whittaker, proprietors of the New Netherlands and the Imperial hotels, is very competent testimany: "We think it only fair to tell you that within a short time after receiving the equipment (Kilfyre) a fire broke out in the Imperial Hotel, which was quickly extinguished by a small amount of the compound out of one of your extinguishers in the hands of one of our employees. We find that the extinguisher is simple to handle, exceedingly effective and does not damage whatsoever the material with which it comes in contact. We are highly satisfied with our purchase and feel free to say that it should be in every hotel and apartment house in the country, and we cheerfully recommend it for that use, as in our opinion it is the finest appliance for the purpose on the market."

In view of the wealth of testimony herein adduced, which is but a tithe of the flattering reports coming in from all trades, callings and conditions, it is not surprising that the Monarch Fire Appliance Company, whose offices are at 27 William Street, New York, should have received for their Kilfyre the Highest Award from the National Export Exposition in Philadelphia.

In taking precautions against such a foe as fire it is not wise to study too closely the cost. If two ounces of prevention are better than one, the two ounces should be forthcoming, but it is surely no detriment to Kilfyre that it is estimated to cost but one-fifth as much as the liquid extinguishers. The saving in water damage alone, supposing the fire to go no further than its outbreak, would offset many times over the cost of hundred pounds; liquid extinguisher weighs from thirty to one hundred pounds, while a tube of Kilfyre weighs three. The claim is broadly made by its proprietors that there are more Kilfyre tubes sold to householders than all other fire extinguishers combined, which speaks well for the intelligence of the average householder.

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THE GREAT TEST OF KILFYRE AT BUFFALO, N. Y. After burning about six minutes.

NO NEED FOR FIRE DEPARTMENT.

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MUNICIPAL MATTERS DETERMINED IN COURT.

Prepared for "City Government." The full text of any opinion cited in this letter can be obtained of City Government Publishing Company, Troy, N. Y., for twenty-five cents.

False Imprisonment—Invalid Ordinance.—Where a municipality acts in good faith, without malice, in the arrest of one charged with violating an ordinance, it is not liable in damages, although the ordinance be invalid. Masters vs. Village of Bowling Green, 101 Fed. Rep. (U. S.) 101.

Ordinance Permitting Railroad Company to Build Viaduct Construed.—Where an ordinance authorizing a railroad company to construct a viaduct, provided that it should "maintain and keep in repair the approaches thereto," it was bound to maintain and keep in repair the paving and roadway on the viaduct. McFarlane et al. vs. City of Chicago, 57 N. E. Rep. (Ill.) 12.

Construction of Franchise for Supply of Light.—An ordinance conferring power on a company to supply light to the inhabitants of the city does not preclude the city itself from subsequently supplying light in parts of the city which were not lighted prior to the passage of the ordinance. Titusville Light & Power Co. vs. City of Titusville, 46 At. Rep. (Pa.) 195.

Invalid Sewer Assessments.—St. 1892, c. 402, making the expense of constructing a sewer, to an amount not exceeding four dollars a lineal foot, assessable on the owners of adjacent lands according to frontage, is void, since such assessment would not necessarily be proportionate to the benefits received from the improvement. Dexter vs. City of Boston, 57 N. E. Rep. (Mass.) 349.

Power of City to Fix Rates Under a Lease of Water Works.—Reservation by a city in a lease of its water works, of the right to regulate rates, provided they be not reduced below the then existing rates, must, if valid, be deemed to be a limitation upon the right of the city as a municipality to regulate water rates, and not a mere granting back by the lessees of the right of the city in its proprietary capacity only. Los Angeles vs. Los Angeles City Water Co., 20 Sup. Ct. Rep. (U. S.) 736.

Fraud in Securing Acceptance by Council.—Where the common council of a city accepted a sewer after jurisdiction had been obtained of the subject-matter, and an opportunity had been offered the property owners to appear before a committee and object to such acceptance, in the absence of fraud the acceptance is not subject to collateral attack by a property owner in resisting an assessment to pay for the improvement, since the action of the city council was conclusive. Green et al. vs. Shanklin et al., 57 N. E. Rep. (Ind.) 269.

Street Improvements—Assessment for Benefits.—St. 1893, c. 339, and St. 1894, c. 439, authorizing Boston street commissioners to improve a street, and assess benefits therefor on real estate, whether situated on the street or not, which the board adjudged to have been benefited beyond the general advantages to all real estate in the city, is not invalid because the benefits to the public and general benefits to other lands in the city are not required to share the expense of the improvement. Lincoln et al. vs. Dorr et al., Street Commissioners, 57 N. E. Rep. (Mass.) 356.

License Tax—Class Legislation.—An ordinance imposing a tax for general revenue purposes, consisting of a license tax, does not deny the equal protection of the law in violation of Const. U. S. Amend. 14, or contravene Const. Pa. art. 9, sec. 1, providing that all taxes shall be uniform on the same class of subjects, though classifying wholesale dealers separate from retailers, and imposing a smaller tax on a wholesaler than on a retailer doing the same amount of business, and though the tax imposed on persons doing a small amount of business is proportionately larger than that imposed on persons doing larger amounts of business. Commonwealth, to Use of City of Titusville vs. Clark, 46 At. Rep. (Pa.) 286.

Right to Question Corporate Existence.—An electric light company was organized under the general incorporating act for manufacturing companies (Pub. Acts 1885, No. 232, as amended by Pub. Acts 1889, No. 170), and on request received from the common council a franchise for the use of the streets, to erect and maintain poles and wires, and continued to exercise such rights and franchises. Held, that by the recognition for nine years of the validity of the incorporation the city was estopped to recall its franchise on the ground that by the incorporation under the general manufacturers' act the company obtained no franchise direct from the legislature for the use of the streets, and that the city had no authority to grant such franchises. Wyandotte Electric Light Co. vs. City of Wyandotte et al., 82 N. W. Rep. (Mich.) 821.

Invalid Permission to Erect Incumbrance in Public Street.—On March 1, 1900, the board of street and water commissioners of the city of Newark passed an ordinance to grant permission to the Prudential Insurance Company to construct and maintain a bridge across Bank street in said city, several feet above the surface of the street, as a passageway between two buildings owned by the company on opposite sides of the street. Held, (1) that the board had not lawful power to grant such permission; (2) that owners of property fronting on Bank street in the blocks adjacent to those on which the company's buildings stood, were entitled to prosecute a certiorari to set aside the ordinance, it being shown by the evidence in the cause that the property of the prosecutors would be injuriously affected by the bridge. State (Beecher et al., Prosecutors) vs. Board of Street and Water Commissioners of City of Newark et al., 46 At. Rep. (N. J.) 166.

Ordinance Granting Franchise to Light Company.—A statute of Missouri (Laws 1891, p. 60) authorizes cities of the third class to erect, maintain, and operate gas or electric light works or water works, to supply light or water for public purposes, and for the use of the inhabitants of such city: "provided, that the council may, in their discretion, grant the right to any person or persons or corporation to erect such works * * * upon such terms as may be prescribed by ordinance: provided, further, that such right to such persons or corporation shall not extend for a longer period than 20 years, and shall not be renewed unless by the consent of a majority of the qualified voters." Acting under such statute a city passed an ordinance by which, "in consideration of benefits to be derived therefrom," it granted to the assignors of a corporation the right to erect, maintain, and operate electric light works for a term of 20 years, with such incidental rights as were necessary for the efficient operation of such works. The ordinance required the grantees to complete the works within a specified time; to erect poles to properly suspend street lights, if contracted for at any time by the city; to maintain a light at a railroad crossing, free of expense to the city; and fixed the limit of rates to be charged for lights. Held that, having adopted the alternative method of procuring light for the city and its inhabitants contemplated by the statute, it was an implied term of the contract, made by the acceptance of the ordinance, that the city would not itself enter into competition with the grantee in supplying lights to private consumers during the terms of the grant by means of a light plant erected under the powers conferred by the statute. Southwest Missouri Light Co. vs. City of Joplin, Mo., 101 Fed. Rep. (U. S.) 23.

Fire Inquests on the German Plan.

An American gentleman who has lived several years in Berlin lately had an experience which was instructive as explaining why fires in that city are infrequent and, as a rule, so little destructive. The code of municipal ordinances designed to protect life and property is not only extremely thorough, but its provisions are enforced with rigid impartiality and great intelligence.

The gentleman whose experience we shall cite occupies apartments on the third floor of a four-story building. One morning he was aroused by the smell of smoke, and on examination found a fire smoldering down through the ceiling of his dining room. He rushed to the corner and turned in the electric alarm. No one interferred with this, but as he started to return he was courteously but emphatically requested by a policeman, who had impassively watched the proceeding, to remain where he was. His appeals to be allowed to return and look after his wife and children were waved aside as irrelevant. There was probably no occasion for so much impatience, and when an alarm was rung the authorities expected exact information as to who had rung it and why. The fact that the gentleman was in slippers and bath robe counted for nothing. Before he was allowed to return his name, occupation and address were taken, and a second policeman was sent to his house to ascertain if there was a fire there. When his statement on this point was verified he was allowed to return.

Presently the engines and other fire department apparatus assembled in a quiet and orderly way. There was no frantic excitement, little clanging of gongs, and no shouting. As it was a "third-class fire," the first and second class engines were sent home again, and the third class firemen took the matter in hand. Instead of deluging the buildings with water, they did the work with chemical apparatus, and had the fire out before

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and serious damage had been done. The firemen then swept up the rubbish and carried it away, and astonished the housekeeper by scrubbing the floor of the room in which a part of the ceiling had fallen. Meanwhile the officers of the department were busy taking notes and making diagrams. When they left the place was clean and in good order, save for the carpentry work and replastering needed to repair the damage. Fancy our firemen on hand and knees, scrubbing floors to restore the cleanliness their destructive energy with axe and pike had converted into a hopeless litter of sodden debris!

Next morning the tenant was summoned to the police court for a rigid examination. It appeared that the fire had originated from a fragment of an incandescent fuel brick which had fallen from a stove in the attic (Waschboden) to the floor, set fire to it, and burned a hole through to the room below. The zinc under this stove was some inches narrower than the ordinance prescribed, and the inquiry was directed to ascertain who set the stove in that way. The tenant made it appear that he had leased the premises as they were, and had been guilty of no violation of law, as the stove in the Waschboden was one of the appointments of the house.

Then the owner was called. He showed that he had just acquired the property by purchase, and that everything in it was as it had been. He was gravely reminded of his duty and told to step aside. The third witness was the former owner, who had sold the building. A searching examination revealed the fact that he had caused or permitted the stove to be set as the authorities found it, and that because of the insufficient protection between it and the floor the accident had occurred. The result was that he was assessed an amount sufficient to cover the cost of calling out the fire department, was required to repair the damaged woodwork and plastering, and was fined 300 marks for having violated an ordinance relative to fire protection in dwellings.—"New York Times."

Contractors Brought to Time.

The contractors who have been at work upon public improvements in Denver, Col., have been extremely careless about carrying out the terms of their contracts. This has been particularly true in regard to the clause requiring the streets to be left in as good condition after the completion of the work as before the streets were torn up.

The contractors have utterly disregarded the protests and orders of the board of public works, and the board has confessed its inability to enforce all the provisions of the contract.

Fortunately for the city of Denver it has a chief executive who is not at a loss for means to compel the unruly contractors to do the work as it should be done. Mayor Johnson said in a recent interview, "I guess if they don't get paid for their work they will commence to come to time, and I will not sign another bond for these men until they put the streets in the condition they should be in and in the condition in which they found them. I will notify the contractor of my intention, and he can do the work or let it alone, just as he pleases, but I do not sign another bond until the streets are put into a condition satisfactory to the people living along them." This mode of treatment has proven effective.

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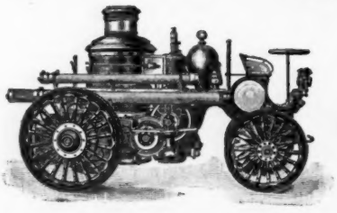

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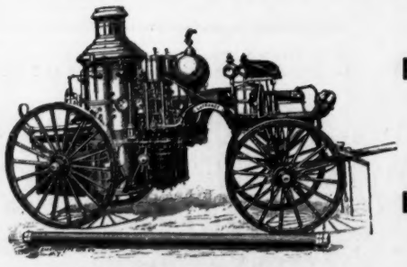

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